VOLUME XXVII

PROCEEDINGS
OF
THE AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION

HELD AT

University of Notre Dame

(Under the patronage of His Excellency, Most Rev. John F. Noll, Bishop of Fort Wayne, and the Catholic Universities, Senior Colleges and Seminaries of the Notre Dame area.)

April 7 and 8, 1953

CHARLES A. HART, *Editor*
Secretary of the Association

PHILOSOPHY AND UNITY

ISSUED BY
THE OFFICE OF THE SECRETARY OF THE ASSOCIATION
THE CATHOLIC UNIVERSITY OF AMERICA
WASHINGTON 17, D. C.

PRICE, THREE DOLLARS

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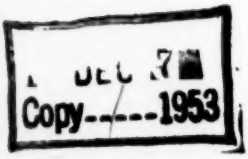

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PHILOSOPHY AND THE UNITY OF WISDOM

(Presidential Address)

TONIGHT, as I stand before you, I cannot feel that I have some paramount wisdom or insight which I should and must convey to you. Many of you have studied more years than I and could teach me much. So I shall be repeating in one way or other what you know. Yet each of us has a way of saying some aspect of the mystery of reality that is peculiar to us, and in so saying it, that reality is made in a different way explicitly intelligible. Each of us must re-say truth as we meet it, re-express reality in some form, and so manifest it anew in time. Such is my effort.

Certain experiences of my philosophical existence have developed in me an irrepressible desire to keep repeating and stressing the undying importance of metaphysics. By that I mean the necessity of forever deepening that philosophical knowledge that has for its object everything that has existence, that *is*, or that which, through Pure Existence, can be. In other words, the necessity of contemplating the existent and all it implies of unity, of truth, and of goodness, and of beauty—of expressing in our minds in an intellectual fashion the actuality of all actualities. It will be an effort that never finishes, for we shall never fully realize the depths to be plumbed, and never express our perfect expression, for we shall never seize by our intellects all that they are capable of seizing until, by His aid, we look upon the utterly intelligible yet unfathomable source of Pure Existence. But we must seize what is given us to seize, formulate it, and communicate it.

In this effort of Metaphysics to seize existence in its totality, there is a double movement which must, as far as possible, develop reciprocally. At one and the same time we must strive to see everything as something that is, as being in as much as it is being; and also strive to see this without losing an appreciation of the diverse manners of being, of the almost endlessly different manners of existing. We have then the unity of a point of view, but not the exclusiveness of a strictly formal object. The object is based primarily on existence, the actuality of for-

mal perfection, but the seizing of that act of existence is not without that of which it is the act. And each existent is itself and not other. This is the object of metaphysics. In that object is also the source of its role of Wisdom. As the object of Metaphysics is related to each being, so in an analogous fashion is Metaphysics as a Wisdom related to the knowledge given by each science.

Metaphysics, by its very object, has a double character: that of a science, and that of Wisdom. As a science it treats of being in as much as it is being, yet this object cannot leave out entirely the diversity of beings, and so all types and manners of being are included. Thus, if there are sciences which study philosophically different manners of being, or if there are sciences that study the operation and connection and structure of natures or essences that we can study only relatively and indirectly through different techniques, these sciences, as bodies of knowledge, are directly or indirectly knowledge of modes of being, and so, as bodies of knowledge with a certain autonomy, can be unified only by means of principles that will respect their specific character, and yet see them all as modes of knowledge; and knowledge is directly or indirectly of being.

The metaphysician, not as developing and studying his science, but as contemplating its principles as principles of being, is alone in the position to turn back and look at all other sciences. The metaphysician demands that each science make explicit in so far as it can, the intelligible aspect it seeks in reality, and the manner in which it renders it explicit. The metaphysician, from the total viewpoint of being, can then situate this aspect without denaturing it, and gradually, considering both the knowledge of the individual science and knowledge of being, re-establish in knowledge a unity that, in the order of science, is an expression of the transcendental unity of being.

It would be impossible to go into all the intellectual points of view that might tend to negate the view I have expressed, but two I wish to mention: one because it sees the same need for a certain unity in knowledge, but strives for a universal viewpoint that I think falls short of the need; the second because it sees the need of an overall wisdom, but because of the preeminence of the Wisdom considered, makes us forget that as a body of knowledge, and knowledge for us, this Wisdom has a certain need for the unifying principles of the lower wisdom.

In the first instance, I refer to the tendency of mathematical logic. It is not my intention to solve the problem of whether mathematics is logic or logic mathematics. What does seem evident, however, it that both sciences present like forms of structures, and this form or structure is considered in a formal way, apart from any specific content. And so this form or structure is seen as applicable to all being, though as embodied in one specific matter it would be seen only analogously like the structure of another specific embodiment.

For example, it seems to me that if it is said that the fundamental axioms of mathematics are not dealing with elements such as three apples as three physical units, not even with three numbers, as entities having properties of a number three, but with ideal elements between which are established certain logical relations, then these logical relations are used in the sense that they do not express any physical objective reality. The elements which also are considered as logical have no properties but those made intelligible in the relations. Thus, the elements are seen as practically indeterminate in nature, except in so far as they are necessary as terms of the relation.

Now, if the notion of relation is stressed in this fashion, with the corresponding denial of any specific nature as explicit in the elements, one gets to the notion of a pure formal structure. This structure is developed as stemming from the fundamental axioms which are themselves relations. It does not matter for the point I am trying to illustrate that there is no absolute agreement as to which are the fundamental axioms. The important point is that what is considered is structure, and this is intelligible as relations between elements. As the emphasis is upon relation, and this does not explicitly express any nature as such, except indirectly in these relations, one could see structure as a form or sort of principle applicable to any being whatsoever. To give just one example, think of a mathematical function, and then our way of expressing being and its analogous character by way of a proportion: the act of existence is to this essence as the act of existence is to that essence. Now, if the relation of the act of existence to the essence is seen as a function, and this is said to express being, it is exactly the same idea of structure that stems from the logico-mathematical point of view.

This logico-mathematical metaphysics, if I may so term it, is extremely subtle and plays the role of metaphysics in giving a

certain unity to the sciences. However, to accept its principles as applicable to all reality, one must realize that it entails a negation of nature or essence, for its fundamental intelligibility refers to the intelligibility of relation. And since relation cannot, in spite of all, be absolutely independent of the terms of the relation, it should be noted that the elements have no reference to existence, and besides they have a pure univocal character in the fact that they are just that which maintains that relation to be that relation, even if it be a function. Thus, the relation as such has identically the same significance throughout, and only as it is embodied in a specific case, as in the existent, does it take on an analogical character.

Basically this view presents a metaphysics of univocal relations, which, as univocal, expresses material conditions, and not a metaphysics of being which, in its total intelligibility from the point of view of existence, is analogical and not expressive directly of a kind of being.

Now, the second instance that might negate the role of metaphysics that was first proposed is one stemming from Theology as a Wisdom. This could happen in various ways. There have been instances in the history of philosophy in which man's intellectual object was limited to a philosophy of nature. The principles of an overall unification of philosophy and science had then to be supplied by Theology. That is an extreme expression of the negation of Metaphysics. However, there are difficulties in deciding on the relation between these two, so as to guard the integrity of each.

I cannot say that I have a complete answer to the intimate relations between these two wisdoms, but I think there is a need to seek little by little all the possible points involved. In general let us consider the position that sees Revelation as in some degree giving intelligibility to our philosophical concepts. With that as our point of reflection, we shall try to discern the character of each Wisdom and the necessity of both.

Let me introduce the problem by an example. Duns Scotus says that "Theology teaches in effect that the same intellect, which actually knows only by mode of abstraction from sensible things, will naturally later know the quiddity of an immaterial substance. This clearly results from what faith teaches regarding the mode of knowledge of the soul of the blessed. But a

faculty of knowing cannot, without change of nature, apprehend something which is not contained in its first or primary object." [1]

In accord with this thesis, Duns Scotus states that the intellect as defined in its present state in this life cannot be the definition of intellect in its very nature, and so he defines intellect in its nature as one capable of intuition of intelligible quiddity. In this instance is not Theology in a sense determining the intelligibility of a nature? Yet we may ask, what is the source of the notion of an intellect with an intellectual intuition intuiting an immaterial quiddity? One would not, I think, immediately say theology.

Perhaps the beginnings of an answer can be found if we put together some basic principles. First, St. Thomas stresses that the supernatural presupposes the natural, so that Revelation presupposes natural knowledge. As he stressed the reality of physical being,[2] he also stressed the reality of man and his knowledge. Now, Revelation is essentially about the First Truth, that is, about the very nature of God Himself in His own mode of existence, which naturally we cannot know. Yet in some manner this is communicated to us. The new truth of Revelation lies, it seems, in the conjunction of the terms of the enunciation made by God in the Divine affirmations. " The truth announced is not anterior to the enunciation itself as in ordinary affirmations; it is the product of it." [3] But what is prior, are the terms, the concepts used. For example, what God is, is said in a proposition: God is three persons in one nature. However, the enunciation is in terms of one, three, person, and nature, which in their essential aspect refer to beings that have a meaning for us. There might be a possibility of using a certain analogy with respect to the judgement as expressing the mode of existence, while the concepts express the essence or quiddity. In Revelation, what plays the role of essence or quiddity is used to maintain the proposition which, like the judgement in its construction, expresses the mode of being. Here of course, the mode of being is not the act of these essences. The essences are the vehicle of the conjunction

[1] Etienne Gilson, *Jean Duns Scotus,* page 59. Vrin, Paris, 1952.

[2] A. C. Pegis, *Some Permanent Contributions of Mediaeval Philosophy to the Notion of Man,* Royal Society of Canada, III Series, Sect. II, Vol. XLIV. 1952.

[3] Prat, *The Theology of St. Paul,* Vol. II, page 266. New York, 1927.

or proposition which communicates to us something of the mode of being of the First Truth. The truth we believe is what is given in the proposition.

That brings us to the second point. Faith, to be meritorious, must be an intellectual assent to the enunciation solely, because it is God who tells us this truth, and not because we have clarified in a certain manner the intelligibility of it. Even though we have good reasons for knowing He has so spoken, such reasons are extrinsic to the intelligibility of the enunciation itself. It is evident then that the terms, no matter what they are, nor to what degree of intelligibility we may bring them, will never of themselves permit us to make, as arising intrinsically from them, a judgement that will in its construction give us that enunciation and so substitute for faith.

Thirdly, St. Thomas holds that both what is known and what is believed is truth, and these things that are known by natural reason are a certain likeness of those things known by faith.

Now, what is implied in these three fundamental stands? First, faith is not in an utterly radical sense the source of intelligibility: one must understand something to believe. Faith is not a vision, but a belief in truth, and therefore truth must deepen and complete truth for us. And most important of all is the presupposition present throughout, that all that is, is true; or that the whole problem of faith and reason belongs to one field of reality that is not divided by such a radical difference that there could be knowledge about one part of it and just some blind adherence to another utterly irrational part. Reality cannot be divided into the radically different, so that faith might be of that which is unintelligible or contradictory. In this basic view St. Thomas differs from the moderns, who seem always to be attempting to relate two fields that are taken as so different that there is no similitude between them.

This basic notion is expressed by every intellect in the act of knowing, for being is what is first seized by the intellect of man, and with it, is seized also that what is, is true, and outside of being is nothing, and what is, is explainable, because the cause is immanent to the effects. Now, of course, this is not made explicit in its metaphysical significance unless mind reflects on its knowledge and deciphers its metaphysical significance. It is manifest in ordinary knowledge in the tendency of intellect to

truth, and in the way it takes for granted that it can go on searching and finding, and never positing absolute chaos and contradiction, or the possibility of no explanation.

Thus for St. Thomas, the whole discussion of the relatedness of faith and reason is within the field of being, but only as having its metaphysical significance in germ. But as that germ of metaphysical significance is made explicit, not all agree, for example, what it is ' to be ' a being.[4]

What then does Revelation give us if it does not give us the ordinary basic knowledge of being in the general meaning of concrete things, and if it does not make explicit the metaphysical notion of what it is ' to be ' a being in the strict metaphysical significance?

It seems to tell us of another living being and His manner of being, which enunciation is made in terms of knowledge that we possess. In telling us this it includes answers in a certain sense to philosophical questions, such as the existence of God and something concerning His attributes; for example, God is, and is a person who lives, knows, and loves, is all-powerful, and rules all things. But in telling us this is does not explicitly say what it is ' to be ' a being, nor what is the metaphysical explanation of an intellect and will. Rather, the truth is conveyed to us in terms of being in the general concrete sense of ordinary knowledge, and we can say for instance that God is like someone we know, for example, Father. And in terms of the same sort of knowledge, it also tells us that in some ways He is not like one whom we know as Father. It is telling us of someone like beings that we know, but who exists according to a mode of existence unlike what we know. In other words, it is telling us plainly of another being and His mode of existence in ordinary language, in much the same way as our ordinary experience tells us about metaphysics. But ordinary experience does not give us metaphysics as such. And neither does Revelation give Metaphysics or the science of theology as such.[5]

[4] Etienne Gilson, *Wisdom and Love in St. Thomas Aquinas.* Aquinas Lecture. Marquette University, 1950.

[5] G. Smith, *Natural Theology,* p. 266. New York, 1951. Father Smith put this relation very clearly as regards the proofs of God's existence. I've 'stuttered' a step further to draw the parallel with theology.

From a speculative point of view, Revelation may give us no more metaphysics than we started with. But eventually man, being presented with this truth of a mode of being in concepts of his knowledge, had to make clear the most exact meaning of the concepts so as to exclude the possibility of an interpretation that might destroy the enunciation. However, this search for the most exact meaning to express a reality that has some, though an ineffable similitude to our knowledge, forces us to turn to an investigation or a study of our general knowledge to get the metaphysical sense of being, and this metaphysical sense is acquired through the comparison of different modes of being. Yet no mind will take up this investigation unless, at the same time, he is already scrutinizing being in his general knowledge to come to a knowledge of being. And a man's ultimate decision as to what it is ' to be ' being is going to arise from his philosophical education in general, which includes the hierarchy of being which has been given him, and in the last analysis it arises from the power of his metaphysical insight. It is the metaphysician as such that decides whether ' to be ' means to exist, or to be true, or if the order is reversible. But on the other hand, the possibility of reaching a truly transcendental point of view from which he can make that decision is present only if reality is accepted as a whole and as a whole of being. The unsophisticated mind from a realist point of view so accepts it. But Revelation makes it perfectly explicit that the field is a field of being, so that the human mind philosophizing can with ease and security go from its first true knowledge, with its implicit metaphysics, to the transcendental point of view in which he can make his metaphysical decision. It is because of Revelation, that it is clearly a decision with respect to being and so transcendental, not vaguely of some principle beyond intelligibility and being. Having made the decision, the metaphysician sees Revelation in these terms. " I am Who Am " or " He Who Is ", is then an " Act of Pure Existence ", or " He is What is, or Truth Itself." To cite another example, man knows that he can wish to do what he wishes and he apparently does what he wishes. In that sense, " freedom " has a meaning. But a consideration of the complexity of the factors involved, and above all, the necessity of seeing clearly the limited good in relation to the total or Supreme Good—at least in a transcendental notion—makes the ultimate

justification of freedom impossible without the decision on being. But Revelation does not tell us what is the best decision nor give us absolutely the notion of freedom, nor give us the best way to solve the complex problem of justifying the notion of freedom. It tells us of another Being something like us, and who is free without our limitations. Yet it is a rational insight and its criteria that must decide the metaphysics of freedom. This insight arises from the intelligibility of the beings given immediately to our sensible-intellectual knowledge and the philosopher's philosophical ability. As our metaphysical knowledge deepens, we decide and understand what is the utter and absolute significance of " to make out of nothing ". Such utter freedom man might never conceive without Revelation; but also, without a metaphysics that permits of such an understanding he might also deny it. Revelation does make possible that, if intellect is intellect at its best, its truth will have the possibility of coming to its fullness.

In fact, Revelation does not give an explicit metaphysics nor its internal development. To put it another way, Revelation gives metaphysics the possibility of developing and guides it in giving it another and final mode of being to consider. This mode is given in terms typical of essences of other modes of being, while it Itself is another Being and strictly is not a mode, but is Being Itself. Thus, no matter how this manner of its being is revealed to us through the various aspects of other things, and no matter how metaphysically precise we make those meanings to guard it from contradiction, its manner of Being metaphysics can never render intelligible as it is in itself.

The influence however, of Revelation can be greater in another order, and so allow for development of the speculative order. This is in the practical order, the influence of which is not always made clear. Revelation is given primarily for man's salvation, that he may reach his end. Now, many philosophize not just to know but to know the answer to life, the why of man and of his end. Thus, a philosopher with natural reason, grasping for these deepest truths in the complexity of reality, needing answers for immediate living, asking questions and seeking conclusions, but needing time and thought and perhaps ability to find the answer, such a mind, if the answer is suddenly revealed, may see as Justin and Augustine that the answers they were looking for are given

more clearly in Revelation than in the philosophy they were scrutinizing. These are answers that satisfy man's living being looking for his fulfillment. They are seized primarily as first principles of action, adhered to primarily as a good, with their aspect of truth accepted in ordinary terms of general knowledge.

Only after their acceptance can man afford the leisure to seek the explicit metaphysical meaning of the things involved and so develop to full completeness his speculative abilities and speculative knowledge. What is held to as a good and is loved moves the intellect to comprehend, so that, for example, the proof of the existence of God that might in some manner be known takes on a depth and fullness in rational explanation that the intellect would not have if it were not impelled by love. Yet throughout, the intellect's speculative decision is its own, so that those decisions of Augustine, Bonaventure, and Thomas are historically not the same—though metaphysically they cannot be considered as ultimate, alternate possibilities.[6]

The philosopher must therefore assume the responsibility of making them and of all that they imply, and in the last analysis in the function of them he must show, at least in a fuller fashion, as regards those revealed truths that of their nature need not be revealed, how these enunciations are answers of philosophical problems and stem from philosophical principles. In showing that necessity, the philosopher understands these truths and no longer believes them. And if he has clearly rendered them intelligible, this intelligibility is communicable, not to many perhaps, and only to the best thinkers, and to those with a certain intellectual rectitude.

Therefore, if Metaphysics has an intrinsic significance arising from a metaphysical insight, it must not be interpreted as having its intelligibility given it by Revelation. It thus stands as a science in its own right, but what is even of more importance *is* that it assures the possibility of Theology being a science. History shows us that the moment Revelation is considered as giving all the meaning to theological knowledge, it is seen as a body of knowledge accepted on faith, but then faith becomes an experi-

[6] In the light of history one must also make a decision with respect to the hierarchy of transcendental perfections. Otherwise the metaphysician would not be expressing the unity of reality but would be positing a fundamental plurality.

ence not able to be interpreted in terms of anything but its own experience, or an irrational fideism.

On the other hand, Revelation as a revelation of Being itself gives information for the philosopher to speculate about, but in any form, it is a Wisdom regulative of even metaphysics as merely the natural knowledge of being including that of its Cause. It is regulative in even a more direct fashion, of the metaphysics of voluntary acts, for only Revelation can identify man's speculative and practical end in the practical order.

But until we see Being Itself, it is our natural knowledge that is the vehicle of Revelation, and metaphysical knowledge the best vehicle to preserve and defend it. Thus Theology's role of Wisdom stems from the reality of which it tells us, but in the scientific order, attempting to give the clearest, though limited, expression of Being itself and its relation to us, it is the science of being or Metaphysics that must be its indispensable tool.

The point that is here so difficult of expression is that metaphysical knowledge is necessary for the best expression and defence of theology, but it is not the only vehicle of its truth, nor does it render the mystery intrinsically more intelligible. It preserves the enunciation in its purest form and preserves it from contradiction and destruction or denial.

Moreover, Metaphysics in expressing the First Cause expresses God, but that Cause is expressed through its effects by analogical notions.[7] In that we are saying that it is true God is, and as Cause it is true that He must, according to His mode, have the absolute perfections which we know through the effects. In Theology we are using this analogical knowledge which stresses being, but still, in the multiplicity of its modes, to express directly the absolute unity in its own manner of Being, Pure Existence. It is as though the analogical notions were as essences to express the essence of a being whose essence is Existence. The inadequacy of any multiplicity, even if it be manners of being, with respect to unity, or the inadequacy of the role of anything as essence to this Existence, is evident. But on the other hand, analogical knowledge preserves even this theological expression

[7] Analogical knowledge of being is knowledge of one being in such terms as are proportioned to the knowledge of another being. G. Smith, *op. cit.*, page 43.

from anthropomorphism or falsification that might result from using directly the essence of any kind, even of spiritual being.

Such are some of the difficulties of this reciprocal influence. In the living reality, the Wisdom of Revelation is Christ, Who gives us an embodiment that overcomes the inadequacies of propositions to express reality, overcomes the shortcomings of ordinary knowledge to express the Divine, overcomes the difficulties of Theology in the use of the highest speculative knowledge, Metaphysics—and supplies for the necessary development of Theology its own need of a Vision.

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THE UNIVERSITY AND PHILOSOPHY

IT has been a distinct pleasure to have the annual meeting of the American Catholic Philosophical Association at the University of Notre Dame this year. While a word of welcome usually meets you as you arrive, I do trust that our pleasure in having you here has been manifested in more than philosophical ways since your arrival. To my tardy words of official greeting may be joined a sincere parting wish that all of you will feel ever welcome to come back soon and to be at home with us always.

It seems most fitting that your Association should hold its annual meeting at a university, a place where all knowledge is taught. If anything has characterized philosophers, it has been the comprehensiveness of their thought, the range of subject matter to which they are committed, and the vast scope of the problems for which they seek definitive solutions. It is particularly fitting that American Catholic philosophers should meet at Notre Dame, for here you find an American Catholic University whose origin and growth is unexplainable except by reference to the abiding and providential care of Our Lady, the seat of wisdom. She indeed is truly the presiding officer here. Her Divine Son, Wisdom Incarnate, reigns here in twenty-nine chapels, as once He was at home in her arms at Nazareth, and ever in her

heart of hearts. Certainly, philosophers, lovers of wisdom, can feel eminently at home in such company.

Frankly, a more difficult problem for me at this moment is to feel at home with you. Presuming to address this group puts me in the position of the prisoner at the bar of justice, convicted on three counts. For the first, he was sentenced to serve fifty years in the penitentiary; for the second, forty years; for the third, thirty years. He looked meekly at the judge, after a bit of mental addition, and said, "Your Honor, I'm afraid I can't serve one hundred and twenty years." "Well now," answered the judge, "just do the best you can." That is all I can promise this eminent group tonight.

If I could be called a philosopher, it would probably be in the sense that all men are philosophers. And yet, I would like to muse a bit about philosophy, your philosophy, tonight, from my own present position in the field of education. My musings may be written off as the sort of practical considerations to be expected of a man immersed in variegated details of university administrations. However, even two philosophers as widely divergent as Aristotle and Kant agreed in this: that all philosophy is divided into the speculative and practical, the study of *what is*, the nature and causes of things, and the study of what *ought to be*, objects of choice, ends and means, in the conduct of life and social institutions.

I think we can all agree here upon *what is* philosophically, although I will make a point for speculation that can emanate from a deeper understanding of what has been and is historically. This is the only valid point of departure for considering *what ought to be* in at least one social institution, the university.

I am not going to speak specifically about a philosophy of education—indeed, this is a subject that no great thinker ever thought to write about specifically, except in the rather recent past. But it does seem fundamental at this point to assume that there can be no valid philosophy of education apart from the more basic consideration of philosophy as a whole.

The whole history of man's varying educational endeavors is little more than a reflection of the intellectual history of man. This history has been an interesting, if strangely illogical, development.

At the time of Plato and Aristotle, philosophy was equated with all knowledge. Even in the practical order then, it was assumed that all would be well if philosophers were kings and all kings were philosophers. The coming of Christianity enlarged the field of knowledge. After the patristic period of speculation upon the data of revelation, we come to those middle ages when theology was preeminent and, to a great extent, overshadowed all other kinds of knowledge. Witness the repudiation of Aristotle before St. Thomas, and the alarm occasioned by Galileo.

We have all about us today the full flowering of a third age of knowledge that was born with Descartes and Auguste Comte. Metaphysics have been replaced by mathematics and physics; a recent writer changes age-old moral standards on the basis of statistical studies, and the greatest scientist of our times cannot be sure of the existence of God.

All this is history, not speculation, but we can speculate about it. Indeed, the philosopher must speculate about it, for he finds his particular kind of knowledge the furthest away in historical preeminence, and he finds himself in what may seem to be an impossible bargaining position in the field of education. As the colloquial phrase goes, he is indeed " caught in the middle."

The scientist today offers the promise and the increasing reality of material progress on earth. The theologian at least can promise the key to eternal salvation in the next world. The philosopher seems faced with the prospect of either mathematicising his philosophy after the pattern of the logical positivists, or merging with the theologians under the dubiously respectable title of handmaid. Even this latter alternative has its disadvantages, for theology, no less than philosophy, has ever less impact on the educational institutions of our day.

Should we not then roundly condemn what has taken place? Should we wish that the order of man's intellectual history had been different, so that he would have progressed in a more orderly, logical fashion, say from scientific empirical knowledge, to philosophical metaphysical knowledge, to the final acme of theological knowledge? No, I think our speculation should begin with what is, and attempt to find some value in the situation, some key to what ought to be.

Might we all be grateful at least for this: that today we are in a position to make *what is* after the fashion of *what ought*

to be. Plato and Aristotle not only lacked the modern developments of scientific empirical knowledge, but divine revelation as well. St. Thomas did the valiant work of reintegrating philosophy and theology in his day without losing the true value of either discipline. Is not the challenge today an even greater one of ordering theology, philosophy, and science? We do little good in condemning the scientism of today when we have done so little to understand its true value in relation to philosophy and theology. We offer little hope for science and, indeed, the world, when we talk so much to each other about erudite and recondite refinements of peripheral metaphysical problems in a language that is as incomprehensible to the scientists as their mathematical formulae are to us.

Perhaps, our speculation about this state of affairs can even find some value in the fact that philosophers are in the middle, as the saying goes. After all, this was the very expression used by St. Thomas in discussing the priesthood of Christ. By being in the middle as the God-man, He joined the two separated extremes: the all-holy God and sinful mankind.

Perhaps, it is providential today that the philosophers are in the middle—between the two extremes of human knowledge, empirical and theological. Philosophy is in the perfect position of the mediator, reaching downward to science and upward to theology. But it must reach!

Again, I trust you excuse me if I refer to *what is.* For more than a hundred years, philosophy has been a requirement of our Catholic university training in this country. Following Leo XIII's famous Encyclical, scholastic philosophy has grown to preeminence. And yet, try to think of one truly outstanding philosopher produced by us, one who has had any appreciable contact, even directive, with the growth of science. Try to think of any philosopher produced by us who has worked effectively for the establishment of some realistic rapport between science and philosophy, to determine the true value and range of each discipline, or even to find any mutually beneficial reason for establishing such a contact.

And, to suggest a field more amenable to influence, what influence has Catholic philosophy had upon the culture of our day by bringing into focus in the realm of social philosophy those clear

At the time of Plato and Aristotle, philosophy was equated with all knowledge. Even in the practical order then, it was assumed that all would be well if philosophers were kings and all kings were philosophers. The coming of Christianity enlarged the field of knowledge. After the patristic period of speculation upon the data of revelation, we come to those middle ages when theology was preeminent and, to a great extent, overshadowed all other kinds of knowledge. Witness the repudiation of Aristotle before St. Thomas, and the alarm occasioned by Galileo.

We have all about us today the full flowering of a third age of knowledge that was born with Descartes and Auguste Comte. Metaphysics have been replaced by mathematics and physics; a recent writer changes age-old moral standards on the basis of statistical studies, and the greatest scientist of our times cannot be sure of the existence of God.

All this is history, not speculation, but we can speculate about it. Indeed, the philosopher must speculate about it, for he finds his particular kind of knowledge the furthest away in historical preeminence, and he finds himself in what may seem to be an impossible bargaining position in the field of education. As the colloquial phrase goes, he is indeed " caught in the middle."

The scientist today offers the promise and the increasing reality of material progress on earth. The theologian at least can promise the key to eternal salvation in the next world. The philosopher seems faced with the prospect of either mathematicising his philosophy after the pattern of the logical positivists, or merging with the theologians under the dubiously respectable title of handmaid. Even this latter alternative has its disadvantages, for theology, no less than philosophy, has ever less impact on the educational institutions of our day.

Should we not then roundly condemn what has taken place? Should we wish that the order of man's intellectual history had been different, so that he would have progressed in a more orderly, logical fashion, say from scientific empirical knowledge, to philosophical metaphysical knowledge, to the final acme of theological knowledge? No, I think our speculation should begin with what is, and attempt to find some value in the situation, some key to what ought to be.

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values of theological wisdom which are also open to reason, though more easily and clearly when illumined by faith.

I think we must admit that the mediation of philosophy has been more possible than actual. This sad fact is reflected in American institutions of higher education generally, where science reigns, where empiricism alone is the approach to all knowledge, while philosophy and theology either get in line or wither.

When we then think of what ought to be, I would hope to point at least to our Catholic institutions of higher learning, but here, too, the vision is still on a far distant horizon. We speak of integration by philosophy and theology, and dream of architectonic arrangements of the various fields of knowledge under the egis of Christian wisdom, but our scientists and philosophers and theologians speak to each other infrequently, and, then, I fear, mainly of matters like the weather, the outcome of the latest sporting event, or of faculty rank and salaries. Is there no hope in all of this, or is it perhaps the darkness before the dawn? The answer, ultimately, will have to come from you philosophers, for yours is the difficult, yet challenging, position of mediatorship. You are in the middle.

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PHILOSOPHY AND THE UNITY OF KNOWLEDGE

IT is with timidity that I approach the gradiose theme of this paper, "Philosophy and the Unity of Knowledge." Were I now enjoying the Beatific Vision, such unity would be quite apparent; or had I the ability and philosophical experience of a Professor Maritain, a Fr. Regis, or a Fr. Smith my confidence would be much greater. I offer the following views on the role of philosophy in relation to the unity of knowledge as a professed neophyte.

At the very beginning I wish to emphasize that I am not concerned as such with the relationship of philosophy to science in

general. Professor Maritain, I am sure, will develop this most capably in his paper. Nor am I concerned with the role of philosophy in relation to the natural sciences which Fr. Regis will undoubtedly present most adequately. My topic by designation must include knowledge in general whether scientific or non-scientific.

My point of departure is the present, and as I survey the panorama of present-day philosophical thought my mind focuses on the conflict between so-called "Scientism" on the one hand and "Existentialism" on the other. Now a word ending in an "ism" often possesses an opprobrious connotation. Such is not the intention in this paper. It is rather the conflict between these two which is deplored. Such a conflict can be resolved neither on the grounds of Scientism nor on those of Existentialism because the two are poles apart. Some mediating agent must be found which possesses the inherent values of both without their defects. It is the contention of this paper that Aristotelian-Thomistic philosophy is such an agent.[1] I do not claim that Thomistic philosophy will bring peace and harmony between one who is convinced that there is no valid knowledge outside of science and another who despises science in favor of emotional, intuitive knowledge. Such a conflict must be resolved on the psychological plane. Rather I maintain that an epistemological union can be effected if the positive points of our philosophy are brought to the fore. This I shall attempt to do by explaining Scientism as one extreme, Existentialism as the other, and Aristotelian-Thomistic philosophy as the source of epistemological unity between the two.

I. Scientism

Scientism is a term with many mobile meanings. It may signify a way of life dominated by scientific inventions and technological advances.[2] It may denote an attitude of mind which worships our present-day scientific principles, methods, and con-

[1] By "Aristotelian-Thomistic" philosophy is meant that plenitude of truth reached through the minds of Aristotle, St. Thomas, and the Scholastic stream of thought.

[2] F. Sherwood Taylor, *Concerning Science* (London, 1949), pp. 104-105.

clusions.[3] Or it may be interpreted as any attitude of mind which demands the deportation of metaphyscis from the land of science to the land of poetry and art.[4] And so the meanings could go on *ad nauseam*, embracing the views of those positivistic scientists who despise philosophy, and those " philosophers " who dread metaphysics.[5]

There are, however, certain characteristics which are common to all forms of Scientism. These may be listed as follows: 1.) formalism and systematization, 2.) abstractionism and conceptualization, 3.) reflectivity, 4.) objectivity, and 5.) transcendence of mind over reality whereby it discovers causes and solves problems.[6]

A. Formalism and systematization.

Every type of scientific knowledge is formalized and systematized. Science is known as an organized body of knowledge. This involves classification in terms of species and genera.[7] It involves reasoning according to strict logical rules.[8] It demands a consistency within the whole realm of scientific theory.[9] Whether the scientist delves into the microscopic world of the atom or the macroscopic world of universal scientific theories he is concerned with structure and form.[10] He is interested in conceptual schemes to explain phenomena and when new phenomena are discovered, new schema often replace the old.[11]

[3] A. d'Abro, *The Evolution of Scientific Thought* (New York, 1950), pp. 334-442. Cf. Bertrand Russell, *Our Knowledge of the External World* (London, 1914), p. 246.

[4] Alfred Jules Ayer, *Language, Truth and Language* (London, 1950), pp. 44-45.

[5] Cf. Herbert Feigl, " Logical Empiricism " in *Readings in Philosophical Analysis* (New York, 1949), p. 12.

[6] This list is by no means exhaustive. It contains merely those points I consider salient in that form of knowledge called " cognitio per causas."

[7] *Posterior Analytics*, Bk. I, ch. 7, in *The Basic Works of Aristotle*, ed. R. McKeon (New York, 1942), p. 121.

[8] A. d'Abro, *op. cit.*, p. 405.

[9] A. d'Abro, *op. cit.*, p. 409.

[10] *Ibidem*, p. 371 cf. Bertrand Russell, *Philosophy* (New York, 1927), p. 292.

[11] Cf. James B. Conant, *On Understanding Science* (New Haven, 1947), pp. 101-103.

This formalistic and systematizing tendency of science has today far overreached the limits it had in the time of Aristotle. The scientist then demanded that each science possess its own genus.[12] Each had its own form and structure. Today however Scientism is attempting a general reduction of all sciences to one. Witness the attempt of the Logical Positivists, especially the Vienna Circle, to arrive at a unity of scientific language and laws. Rudolf Carnap tells us that a unity of scientific laws has not been reached, but there is a unity of language in science. In his own words:

> The construction of one homogeneous system of laws for the whole of science is an aim for the future development of science ... On the other hand, there is a unity of language in science, viz. a common reduction basis for the terms of all branches of sciences, this basis consisting of a very narrow and homogeneous class of terms of the physical thing—language.[13]

Coherence within the structure is then the keynote of modern scientific truth.

B. Abstractionism and conceptualization.

Connected with this tendency towards formalism and systematization is Scientism's attempt to search for unity in diversity. This unity is sought through progressive generalization.[14] This I call abstractionism and conceptualization not in the sense of the Thomistic concept of abstraction but in the sense of a progressive extension of univocal concepts. This unity results from the reduction of quality to quantity without which modern science could not exist.[15] Unity, beauty, and simplicity are the criteria of truth for the modern mathematical physicist. Witness the reduction of space and time to the unity of the space-

[12] *Post. Analytics*, Bk. 1, Ch. 7, *op. cit.*, p. 122. "Arithmetical demonstration and the other sciences likewise possess, each of them, their own genera; so that if the demonstration is to pass from one sphere to another, the genus must be either absolutely or to some extent the same." Cf. also Bk. 1, ch. 28, p. 153.

[13] Rudolf Carnap: "Logical Foundations of the Unity of Science" in *Readings in Philosophical Analysis* (New York, 1949), p. 422.

[14] A. d'Abro, *op. cit.*, p. 375.

[15] *Ibidem*, pp. 388-389.

time continuum in Einstein's theory of relativity. Such unity is possible only through what Carnap calls "reducibility" or a process of reduction.[16]

Generalizations in science today are products of a search for unity which exists in the mathematical equation. Equations assert relationships between concepts and symbols. Hence today science seeks a knowledge of causes in the sense of a relation between events which occur within a given structure. The persistency of this structure replaces the permanency of our well-known ontological substance and, as Russell tells us, it forms the basis for causality and induction.[17] The focus of the modern scientific mind, therefore, rests on concepts and relationships. These concepts are formed through what I call abstractionism and conceptionalization and the perception of their relationships is reached through the process of reflectivity.

C. Reflectivity.

By reflectivity I mean the ability of the mind to turn back upon itself and examine its concepts and their relationships. This is the meaning given to reasoning by both Hume and Kant. Such reflectivity is indeed reasoning, but the net result remains within the mind.[18] We could use Aristotle's distinction between dialectical and demonstrative reasoning and call it scientific dialectics insofar as the conclusions remain probable.[19] Bertrand Russell in his work entitled *Human Knowledge; Its Scope and Limits* states that "All knowledge is in some degree doubtful, and we cannot say what degree of doubtfulness makes it cease to be knowledge, anymore than we can say how much loss of hair makes a man bald."[20]

[16] R. Carnap, *op. cit.*, pp. 413-415.

[17] Bertrand Russell, *Human Knowledge: Its Scope and Limits* (New York, 1948), p. 473.

[18] A. d'Abro, *op. cit.*, pp. 370-371: "Of course, a view of this sort presupposes that we are justified in asserting that knowledge can be acquired only by means of rational co-ordinations.... Rational co-ordinations have their most perfect prototype in mathematical co-ordinations.... Now mathematical equations are nothing but relations, and from initial relations all we can deduce are other relations. In other words, our equations can never yield us more than we orginally put into them."

[19] Cf. *Topica*, Bk. I, ch. 1, *op. cit.*, p. 188. *Posterior Analytics, op. cit.*, Bk. I, ch. 2, p. 112.

[20] B. Russell, *Human Knowledge*, p. 497.

Through such reflectivity Scientism may confuse the abstraction with the reality. It does however preserve the univocal universality and necessity [21] whence flows that objectivity which science so dearly cherishes.

D. Objectivity.

That all science is objective can hardly be denied. It is objective in the sense that it goes beyond all personal opinions, feelings, and desires.[22] Aristotle himself held that truth obtained by demonstrative knowledge must be necessary.[23] This means that the fact cannot be other than it is. Here is objectivity. In modern Scientism this objectivity rests in the necessary and logical connection between the various terms of the scientific theory. However, the more fundamental objectivity is rooted in the observed phenomena which the theory must explain. New facts may destroy the coherency of a theory and a new theory must be constructed.[24]

This objectivity which Scientism demands necessitates the denial of personalized thinking. Scientific knowledge must be universal, necessary, coldly logical. Some say philosophical knowledge must be exclusively of this sort. A prominent Logical Positivist has stated:

> The main contribution that philosophical reconstruction can make in this regard lies in the direction of an education toward maturer ways of thinking, thinking which possesses the virtues characteristic of science: clarity and consistency, testability and adequacy, precision and objectivity.[25]

[21] *Ibid.*, pp. 504-505. Cf. also Herbert Feigl, *op. cit.*, pp. 20-21: "The locus of the 'necessity' in the light of which the facts appear when explained, lies neither in the laws as formulated in the assumptions nor in the specific facts described, but exclusively in the reaction of logical implication between premises and conclusions."

[22] B. Russell, *Human Knowledge*, p. 3: "Scientific knowledge aims at being wholly impersonal, and tries to state what has been discovered by the collective intellect of mankind." Note the quantitative tone of such an observation.

[23] *Posterior Analytics*, Bk. I, ch. 4, *op. cit.*, p. 115.

[24] A. d'Abro, *op. cit.*, p. 441: "A properly constructed theory is thus exceedingly fragile and might be overthrown at any moment."

[25] Herbert Feigl, "Logical Empiricism", *op. cit.*, p. 5.

True knowledge is objective, factual knowledge. Such objectivity is however rooted in two kinds of facts: *the observed facts* and *the reasoned facts.*[26] The emphasis of modern scientific thought has been placed on the " reasoned " aspect rather than on the " fact "[27] and thus we have the fifth characteristic of Scientism, namely the transcendence of mind over reality.

E. Transcendence of mind over reality.

To my mind, transcendence of mind over reality is the most essential and outstanding characteristic of modern Scientism. By transcendence I here mean the mind's tendency to " stand above " the reality which it knows. In this position, the mind can vary its contacts with reality, switching from the " observed " facts to the " reasoned " facts which exist within itself. Evidence of this tendency is replete within the literature of Scientism. In his work entitled *The Evolution of Scientific Thought,* A. d'Abro states paradoxically that:

> When, therefore, physical phenomena are translated into mathematical formulae, the theoretical physicist will always endeavor to obtain beautiful equations rather than awkward ones. Of course, since he must restrict himself to a slavish translation of physical results, his initiative in this respect may be extremely limited. Nevertheless, in certain cases *it may be possible to add an unobtrusive term to the equations,* though this term may not actually be demanded by experiment. If this additional term renders the equations more symmetric, there will be every incentive to retain it.[28]

In the modern physics of relativity this dominance of mind over reality is apparent in Einstein's use of the mental construct " space-time " as a really existing entity. Bertrand Russell emphasizes this dominance when he states:

> The common world in which we believe ourselves to live is a construction, partly scientific, partly pre-scientific.[29]

[26] *Posterior Analytics,* Bk. I, ch. 13, p. 130.

[27] The scientist of today uses mathematics unknown in the time of Aristotle. Forsaking Euclidean geometry and favoring the Gaussian system of co-ordinates, the theoretical physicist has much more freedom to play around with the symbolic contents of the mind.

[28] *Op. cit.,* p. 441. (Italics mine.)

[29] *Human Knowledge. Its Scope and Limits,* p. 7.

The attempt of the Logical Positivists to reduce philosophy to a logic of science reveals this tendency.[30] It is apparent, of course, that this emphasis of mind over reality is idealistic in tendency. The objects of thought are within the mind itself. Professor C. I. Lewis has criticized the Logical Positivism of the Vienna Circle as "methodological solipsism" guilty of the egocentric predicament. In his own words:

> Subjective idealism, consistently carried through, ends by qualifying every substantive with the prefix "idea of" or "experience of", which by being thus universal becomes meaningless.[31]

From this epistemological emphasis of mind over reality we can see how Scientism would involve the foregoing characteristics. The mind can both discover form and structure in reality or it can impose such form. Moreover, it can transcend the individually existing reality and arrive at abstract, universal meanings, as apparent in the old dictum "*Scientia est de universalibus*". At the same time it can establish objectivity either in reality itself or in the universal content in the mind. In like manner, it can either discover or construct the characteristic of necessity so apparent in scientific knowledge. The reflectivity involved in such knowledge, moreover, uncovers the causes or reasons for the observed phenomena. All of these are possible because the mind has the ability to transcend the individual, existent reality with all its contingencies.

Scientific knowledge is therefore a knowledge of "causes" which is reflex, necessary, universal, abstract, and organized. It is a step-by-step process involving the multiplication of species or concepts through long, involved discursive reasoning. In the terminology of St. Thomas we may call it *ratio* involving the habit known as *scientia*.[32] It is true that today the scientific concepts of "cause", "reality", even "science" itself has a different meaning than they did in the time of St. Thomas. This, however, is essentially an ontological rather than an epistemological problem. From the aspect of epistemology, all sci-

[30] Cf. A. J. Ayer, *op. cit.*, p. 153.

[31] C. I. Lewis, "Experience and Meaning" in *Readings in Philosophical Analysis* (New York, 1949), p. 131. One may wonder whether or not the "Logical Positivism" of Lewis himself is not guilty of this same fallacy.

[32] Cf. *S. T.*, I, 2.79, a.8c; I, 2.79, a.10c. Also *DeVeritate*, 1.5, a.1.

ence—whether ancient, medieval, or modern—involves at least these five characteristics: formalism, abstractionism, reflectivity, objectivity, and the transcendence of mind over reality. The modern-day worship of these I have designated as Scientism—an approach that lies at the opposite extreme from what is known as Existentialism.

II. Existentialism

To attempt a global definition of Existentialism is to court the danger of flagrant overgeneralization. Like Scientism, it has many meanings and practically defies definition by its very nature. It emphasizes existence over essence. Essence can be conceptualized and hence defined; existence cannot. Moreover, there are practically as many forms of Existentialism as there are existentialists. Certain attempts at classification have been made, however. Ralph Harper, for instance, in his small work entitled *Existentialism* [33] divides it into two streams: the Tragic Existentialism of Kierkegaard, Heidegger, and Sartre; and the Christian Existentialism of Rousselot, D'Arcy, and Guthrie. Helmut Kuhn divides it into Critical Existentialism on the one hand, embracing the Dialectical Theology of Barth, the Kantian Existentialism of Jaspers, the Phenomenological Existentialism of Husserl, Heidegger, and Sartre; and on the other hand, the Social Existentialism of Marcel, Maritain, and Gilson.[34] Such classifications have their inherent dangers. Two other authorities, Professor Kurt F. Reinhardt in his work *The Existentialist Revolt* and Professor James Collins in his book *The Existentialists; A Critical Study* both refrain from making a classification and present instead the individual thinkers with a conclusion on the fundamental themes of Existentialism in general.[35]

Perhaps a general idea of Existentialism can best be given in the words of E. Mounier:

[33] Ralph Harper, *Existentialism* (Cambridge, Mass., 1948), pp. 25-43; pp. 103-146.

[34] Helmut Kuhn, "Existentialism" in *A History of Philosophical Systems*, edited by Vergilius Ferm. The Philosophical Library, N. Y., 1950, pp. 405-415.

[35] Kurt F. Reinhardt, *The Existentialist Revolt*, Bruce, Milwaukee, 1952. James Collins, *The Existentialists; A critical Study*, Henry Regnery, Chicago, 1952.

> In more general terms, one can characterize this thought as a reaction of the philosophy of man against the excesses of the philosophy of ideas and the philosophy of things. For it, the fundamental problem is not existence in its totality but the existence of man. It reproves traditional philosophy as having too often ignored him in favor of the philosophy of the world or the products of the mind.[36]

At any rate, existential thinking is, to a great extent, personalized thinking in opposition to objective scientific thought; and for our purposes may be looked upon as a reaction to Scientism.[37] We may therefore list the general epistemological characteristics of Existentialism in contrast to those of Scientism as follows:

1.) In place of the formalism of science, the existentialist upholds non-formalism.
2.) Instead of scientific abstractionism, Existentialism incorporates within itself certain judgments of value.
3.) In place of the reflectivity which characterizes science, the existential thinker emphasizes an immediate contact with reality.
4.) The objectivity of science is replaced by subjectivity.
5.) The scientific emphasis of mind over reality gives way to the existential stress of reality over the mind.

Very briefly I shall develop each of these points to bring this opposition into relief.

A. Non-Formalism

We have seen how science demands a systematization of thought. The existentialist maintains that science has produced a like regimentation in human life. Science has made great technological advances, has given man implements and machines to simplify human living; but it has at the same time enslaved

[36] E. Mounier, *Introduction aux Existentialismes* (Paris, 1947), p. 8: "En termes très généraux, on pourrait caractériser cette pensée comme une réaction de la philosophie de l'homme contre l'excès de la philosophie des idées et de la philosophie des choses. Pour elle, non pas tant l'existence dans toute son extension, mais l'existence de l'homme est le problème premier de la philosophie. Elle reproche à la philosophie traditionnelle de l'avoir trop souvent méconnu au profit de la philosophie du monde au des products de l'esprit."

[37] Cf. Joseph Pieper, *Leisure, The Basis of Culture* (N. Y., 1952), pp. 139-141.

man and depersonalized him. Our age of technocracy has departmentalized human life and made man a mere functionary. Gabriel Marcel tells us that modern man has lost the sense of being; that he has become a conglomeration of functions both vital and social so that all fit into a time-table or schedule.[38] Human life has become emptied of real meaning. As Marcel states:

> I have written on another occasion that, provided it is taken in its metaphysical rather than physical sense, the distinction of *full* and *empty* seems to me more fundamental than that of *one* and *many*.... Life in a world centered on the idea of function is open to despair, is an outlet to despair, because in reality this world is empty because it rings hollow.[39]

Certain existentialists find reality much less ordered and formalized than reason presents. In the case of Sartre reality has been emptied of all order and hence becomes unintelligible. He has gone to the extreme of smothering essence within existence to such an extent that reality appears completely irrational.[40] We see how fear, dread, and despair follow. Other existentialists, who have repudiated Sartre, attribute this non-formalism not to reality in itself but to the imperfection of the human mind to grasp all of reality as a system. This is possible to God alone. From this flow the typically existential themes of estrangement, absurdity, crisis, and anguish.[41] On the positive side there result the Christian existential themes of finitude, participation, fidelity, and a sense of mystery.[42] As an undercur-

[38] Gabriel Marcel, The Philosophy of Existence (London, 1948), pp. 102. Cf. also *Positions et Approches Concrètes du Mystère Ontologique* (Louvain & Paris, 1949), p. 47.

[39] *Positions et Approches Concrètes du Mystère Ontologique*, p. 49: J'ai eu l'occasion d'écrire que pourou qu'elle fut prise en son acception métaphysique et non physique, la distinction du *plein* et du *vide* me semblait plus fondamentale que celle de *l'un* et du *plusieurs*... La vie un monde axé sur l'idée de fonction est exposée au désespoir, elle débouche sur le désespair, parce qu'en réalité ce monde est vide, parce qu'il sonne creux." (Italics mine.)

[40] Cf. Jacques Maritain, *Existence and the Existent*; translated by Lewis Galantiere and Gerald B. Phelan; Pantheon, N. Y., 1948, p. 24.

[41] Cf. Kurt F. Reinhardt, *op. cit.*, pp. 232-236.

[42] Cf. Gabriel Marcel, *The Philosophy of Existence*, pp. 67-76. Also his *The Mystery of Being*, Vol. 1: *Reflection and Mystery*; Henry Regnery, Chicago, 1951, Ch. VII. Cf. also Joseph Pieper, *op. cit.*, pp. 154-165.

rent running through both these positive and negative characteristics lies the existentialist's insistence upon judgments of value —an emphasis abhorrent to the man of science.

B. Judgments of Value.

Existentialism, unlike Scientism, seeks an aesthetic, ethical, and religious interpretation of reality. Man's existence is seen as religiously orientated, either towards earth, as with Sartre; or towards another existence, as with Marcel. But whatever the outlook, all existentialists employ value-judgments. From this point of view, the *good* enters the realm of knowledge as well as the *true*. Moreover, *beauty* has its bearings in reality.[43]

This stress of judgment is unlike the conceptual approach of Scientism. It comes to grips with reality rather than conceptual abstractions and has pointed the way for many Thomists to realize the existentialism inherent in St. Thomas.[44]

C. Immediacy.

These judgments of value reveal an immediate contact with reality very different from the reflectivity of scientific thought. This immediacy is revealed in the emotional approach of most existentialists and a grounding of thought in intuition.[45] Thus there results a mystical overtone which has caused a great deal of discomforture to the proponents of Scientism.[46] This immediacy preserves the ontological status of Heidegger, Marcel, Pieper, etc., once the purely phenomenological method is forsaken. Sartre, however, by strict adherence to this method falls into the same idealistic stream that characterizes Scientism with its emphasis of mind over reality.

This immediacy evident in existentialism is apparent in Marcel's theme of participation in which is implicit what he calls

[43] Note the intrinsic interrelationship between philosophy and art in the writings of Sartre, Marcel, Camus, Koffa, Rilke, etc.

[44] Cf. the writings of Maritain, Gilson, Hoenen, etc. The emphasis of Thomists has been on the intellectual judgment and its existential character. This is as St. Thomas intended.

[45] This tendency is apparent in practically all existential writing. Marcel's "reflection" differs from the "reflectivity" of science insofar as it is an "act of feeling" and hence an immediate contact with reality. Cf. his *The Mystery of Being*, Vol. I, p. 83.

[46] Cf. Bertrand Russell, *Mysticism and Logic*, Longmans, Green & Co., London, 1919, pp. 1-12, especially his attacks on Bergson.

" recollection " by which the individual over-passes oppositions such as " subjective " and " objective " and establishes a unity in which the " turning towards myself " and the " stretching outward from myself " meet.[47] This reveals the typically existential point of departure, namely the really existing individual, the " I ".

D. Subjectivity.

The frequent use of this personal pronoun " I " in existentialistic writing manifests an apparent pre-occupation with personalized thinking and feeling. This is diametrically opposed to Scientism's espousal of impersonal, universal, and objective thought. This opposition is quite apparent in the writings of Kierkegaard.[48] Modern existentialists reveal it in their opposition to the " environmental " world of regimentation and formalism. They try to overcome subjectivity through the use of Husserl's phenomenological method but whether or not they succeed is a highly debatable point. Sartre certainly has not succeeded in basing an ontology on phenomenology.[49] It is questionable whether Heidegger's emphasis on the " Naught " transcends subjectivity. Even Marcel's concept of " transcendence " which, he states, is not a " going beyond " all experience but rather a striving towards an increasingly pure mode of experience, contains a subjective connotation.[50]

However, it may be perhaps because of this subjectivity that the existentialist gains new insights into the depths of being and realizes that reality " stands above " the mind rather than that the mind " stands above " reality.

E. Transcendence of Reality over the Mind.

Unlike the scientist, the existentialist does not look upon reality or his thoughts about reality as a perfectly ordered system. For him reality cannot be encompassed within the human

[47] *The Mystery of Being*, Vol. I, pp. 136-137.

[48] Cf. Soren Kierkegaard, *Concluding Unscientific Postscript*, Princeton University Press, Princeton, 1941.

[49] Cf. Jean-Paul Sartre, *L'Etre et le méant: Essai d'ontologie phénomenologique*, Gallimard, Paris, 1943. Satre remains throughout in the realm of the mind.

[50] *The Mystery of Being*, Vol. I, pp. 37-39.

mind. For this reason he makes a distinction between the *problems* of reality and its *mystery*.[51] A mystery for him is a problem which encroaches upon its own data. Man alone is capable of discovering the mystery in being because he alone can ask the "Why" and "Wherefore" of his own existence.

In confronting this mystery, he realizes that reality is greater than his mind and himself. This is revealed through "recollection" in which he "re-collects" himself as a unity.[52] This unity is not self-sufficient however and he "suffers" a tension which is theologically orientated. This tension is however the life-blood of his philosophy [53] revealing to him that reality and life transcend the natural limits of conceptual knowledge.

Reality then thus remains a system for God alone. Man and his mind are finite and as such the depth and heights of reality transcend him and remain a mystery. For the scientist there are no mysteries, only problems.

III. Aristotelian-Thomistic Philosophy

The conflict between Scientism and Existentialism which has thus been presented is our modern version of an opposition that has appeared time and again within the history of man. It may be defined as the conflict between *reason* and *intuition*. Witness the differences between Parmenides and Heraclitus, Aristotle, and Plato, Descartes and Pascal, Hegel and Kierkegaard, Russell and Bergson. Witness the swing of the pendulum back and forth between Rationalism and Mysticism. On the one side we witness the espousal of cold, objective, formalized thought; on the other, a warm, subjective, free mode of living. Eternally man seeks a unity between knowing and living, between thought and life; and eternally it escapes him. He leans too far towards thought and makes life an abstraction; or he leans too far towards life and makes thought impossible. Perhaps this tension results from the finite nature of man. Perhaps it is the human counterpart of that dynamic tension between essence and existence which characterizes all contingent beings. At any rate, it remains a fact, and as such, should be capable of philosophical scrutiny.

[51] Cf. Gabriel Marcel, *The Philosophy of Existence* (London, 1948), pp. 104; 11.

[52] *Ibid.*, p. 12.

[53] Joseph Pieper, *Leisure, The Basis of Culture*, pp. 155-157.

For the Thomistic philosopher this dualism remains within the compass of his philosophical endeavors. The true Thomist neither divorces thought from life as the scientist does; nor does he divorce life from thought as many existentialists do. From the ontological viewpoint, the reason for this lies in the fact that his philosophy concerns itself with *being* (ens) which embraces both essence and existence. He thus avoids the pitfalls of Scientism's over-emphasis on essence and Existentialism's overstress on existence.

From the epistemological viewpoint, which is the concern of this paper, this same thought may be expressed in terms of mind and reality. Whereas the scientist stresses the transcendence of mind over reality and the existenialist stresses reality over the mind, the Thomistic philosopher stresses mind *and* reality. He can agree with the scientist's claim for universality, necessity, objectivity, and organization, in knowledge; and he can also agree with the existentialist's claim of finitude, contingency, subjectivity, and freedom, in life. This results from his epistemological position known as Moderate Realism which is ontologically rooted in *analogical being or reality.* From this flows the nature of his philosophy as both a *science* (scientia) and a *wisdom* (sapientia).

Both Aristotle and St. Thomas define philosophy in these two terms.[54] Aristotle tells us it is a divine science, a knowledge which is most like that possessed by God. For man it begins with *wonder* and ends in a *knowledge of* the highest, most universal *causes.*[55] In the light of this, it is the function of a wise man to ordain and judge. St. Thomas, with a more existential insight, looks upon wisdom as an intensive penetration of reality. He, through faith, distinguishes philosophical, theological, and mystical wisdom. It is a virtue called *sapientia* which is distinct, yet inseparable from *scientia* and *intellectus.* Scientia (science) denotes discursive reasoning; intellectus (intuition)

[54] For Aristotle's definitions see *Posterior Analytics,* Bk. I for his concept of science; *Metaphysics,* Bk. I, chapter 2 for philosophy. For St. Thomas' definitions see his corresponding commentaries on Aristotle's works and also *Summa Theologica* I, Q. 1, a. 1, 3, 6; I-II, Q. 57; II-II, Q. 9; Q. 45. In these references will be found the distinguishing marks between philosophical wisdom, theological wisdom, and mystical wisdom.

[55] *Metaphysics,* Bk. I, chapter 2.

denotes intuitive insight into being and its first principles.[56] *Sapientia* denotes that intellectual virtue by which man through discursive reasoning (ratio) begins with an intuition of being (intellectus) and ends with a deeper intuition or insight into being. This new insight in turn becomes the starting point for another discursive reasoning process; and so the philosophical act is a continuously deeper penetration into the mystery of being; both *scientia* and *intellectus* are necessary for *sapientia.*

We see, therefore, that Thomistic philosophy partakes of both reason and intuition; and the Thomistic philosopher employs both reflection and immediacy in his philosophical act.[57] His reflection, unlike that of Scientism, is grounded in being; and his immediacy, unlike that of Existentialism, is intellectually intelligible.[58] For the true Thomist, therefore, wisdom is not merely a discipline of thought; nor is it only a mode of life—it is both. For him, knowledge and life are inseparable because he is responsive to reality in its totality. He is, consequently, both proud and humble; proud of the accomplishments his philosophy has attained, and humble before the mysteries that yet remain. His future, however, is rooted in his humility, for he realizes that there are other wisdoms more elevated than his philosophy—a realization that is possible because he is " open from above ", so that the supernatural realm of faith and God's grace are as much a reality to him as the quantified space-time reality of the scientist and the nature—limited existence of the existentialist.

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[56] *S.T.*, I-II, 2.57, a.2c.

[57] One of the greatest contributions of Jacques Maritain to Thomistic philosophy, in my opinion, is his realization of the necessity for an " abstractive intuition of being ". Cf. *Existence and the Existent*, Pantheon, N. Y., p. 21 ff.

[58] For a further discussion of reflection and immediacy see this writer's *The Thomistic Doctrine on the Possible Intellect*, The Catholic University Press, Washington, D. C., 1950, pp. 159-173. Further research into the intrinsic relationship between reflection and immediacy could, if capably done, prove to be a source of immense insight into the wealth of philosophic truth as yet unmined.

COMMENT ON DR. FRANZ'S PAPER

THE thesis which has been presented is this: Thomism can serve as the mediating agent, in an epistemological sense, of the conflict between scientism and existentialism. Although these two movements are poles apart, Thomism can effect an epistemological union between them. This thesis is certainly very attractive and Fr. Franz, I believe, has presented it extremely well despite the confining time limits that he has had to observe. It seems to me that his thesis involves two propositions: first, that scientism and existentialism are poles apart; and secondly, that Thomism can serve as the source of epistemological union between them since it incorporates the salient epistemological characteristics of these two types of knowledge.

To set up a discussion of how Thomism can accomplish this feat, it might be of value to make a few observations concerning the clash between these types of knowledge. The conflict between scientism and existentialism is presented as a conflict between reason and intuition. Without denying that there is a definite clash in this respect, could it not be argued that there is some kind of an intuitive character which belongs to scientism? A theory is not reached as the strict conclusion of a process of very close reasoning, but is rather a leap into the unknown, a going beyond the evidence, a brilliant guess whose justification comes later when experimental results verify the predictions pregnant in the theory. On the other hand, does not existentialism employ discursive reasoning?

The formalism and conceptualization of scientism has been contrasted with the non-formalism and non-systematization of existentialism. Closely allied to this contrast, in fact overlapping it to some extent, is that of the abstractionism of scientism as opposed to the judgment of value characteristic of existentialism. However, is not existentialism to some degree formal and systematic, is it not to be credited with some abstractionism and conceptualization? Otherwise would it not be reduced to pure silence, would it not be incommunicable? Has not Heidegger set out to develop a science of being? Has not Sartre presented a science of ontology? Has not Marcel indicated that his doctrine can be presented in some kind of a systematic form?

With regard to judgments of value, Fr. Franz has pointed out that the good and the beautiful enter into the realm of existential knowledge. Are they entirely foreign to scientism? Fr. Franz mentioned beauty as a criterion of truth in scientism. Nobel prize winner C. V. Raman has written: "Science . . . is a fusion of man's aesthetic and intellectual functions devoted to the representation of nature. It is therefore the highest form of creative art."[1] J. W. N. Sullivan states: "Science provides the contemplative imagination with objects of great aesthetic charm. This last consideration . . . is probably the most important consideration of all to scientific men".[2] Furthermore does not the pragmatic or utilitarian good serve as a criterion of scientific theories?

Scientism has been presented as over-stressing essence and existentialism as over-stressing existence. It might be well to emphasize that Fr. Franz does not necessarily mean that scientism gives knowledge of the essences or natures of material things. For his thesis it makes no difference whether scientism gives essential knowledge of things or whether it manufactures knowledge and imposes it on reality somewhat after the manner of the Kantian categories or the Eddington Procrustean beds. Such a problem, I believe he would say, is ontological and not epistemological, at least not in the sense in which he is using that word. The knowledge of scientism is molded into the form of essences, no matter what its relation to reality might be. He is really contrasting scientism and existentialism as types of knowledge. Now in regard to existentialism is there any truth in the charge that at least some of its proponents have turned existence into an essence and advance philosophies of the essence of existence?

Fr. Franz has dwelt a bit on the mystery in existentialism and the problem in scientism. To quote a work that Einstein has praised: "In the evolution of scientific thought one fact has become impressively clear: there is no mystery of the physical world which does not point to a mystery beyond itself. All highroads of the intellect, all byways of theory and conjecture, lead ultimately to an abyss that human ingenuity can never

[1] *The New Physics*, p. 140.

[2] *The Limitations of Science*, p. 7.

span."[3] It might not be inappropriate here to refer to the scepticism that appears embedded in existentialism. Is there not a sceptical current in scientism? In the work I have just quoted, the author, after pointing out that science cannot tell why things happen, adds: "The certainty that science can explain how things happen began to dim about twenty years ago. And right now it is a question whether scientific man is in touch with "reality" at all—or can ever hope to be."[4] Can it not be argued that modern science gives but probable knowledge, not certain knowledge, and that it is therefore radically a scepticism?

I think it needless to make any observations on the problem of how Thomism incorporates the characteristics of scientism and existentialism. Such problems as, for example, in what way there is a counterpart in Thomism to the immediacy of existentialism, to its subjectivity, which is not quite the same thing as subjectivism, how Thomism is both essentialistic and existentialistic, and how it is systematic without becoming a closed system, such problems, I think, are uppermost in the minds of everyone.

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PHILOSOPHY AND THE UNITY OF THE SCIENCES

I

1. It is an obvious fact that the sciences, in proportion as they have achieved the admirable developments which characterize them in modern times, have tended toward greater and greater multiplicity. Great scientific disciplines have divided and are dividing into parts each of which is enough to absorb the whole competence of a given scientist. And this process of specialization will normally continue. Of themselves, the sciences tend to divide and multiply, so to speak *ad infinitum*.

Will the human mind itself enter, as a result, a state of intel-

[3] Lincoln Barnett, *The Universe and Dr. Einstein*, pp. 126-7.

[4] *Ibid.*, p. 18.

lectual atomization? If the sciences are to achieve some kind of unity, this cannot be expected at the proper level of the sciences themselves. It can be obtained only at the level of some superordinate knowledge, which uses other ways and approaches to conquer intellectually reality. Such knowledge, superordinate to the sciences, is philosophy.

Summing up what I have tried to elucidate in other essays, I would say that "it is necessary to recognize two essentially distinct ways of analyzing the world of sense-perceivable reality and of building the concepts required for this. The first way is by a *non-ontological* analysis, an *"empiriological"* analysis of the real. This is the scope of scientific knowledge. The second way is by an *ontological* analysis of the real. This is the scope of philosophical knowledge. . . . Science resolves its concepts and its definitions in the observable and the measurable as such. Philosophy resolves its concepts and its definitions in the intelligible being." Thus, "in order to master becoming and the flux of phenomena, science works, so to speak, against the grain of the natural tendencies of the intellect, and uses, as its own instruments, explanatory symbols which are ideal entities (*entia rationis*) founded on reality, above all, mathematical entities built on the observations and measurements collected by the senses." Science is a kind of knowledge which is constructive in type, it constructs on the data of experience systems of symbols the emergent results of which are to be verified by facts. "On this condition, the human mind can scientifically dominate becoming and sense-perceivable phenomena, but, at the same time, it gives up any hope of grasping the inner being of things." [1]

On the other hand, philosophy is a kind of knowledge which is perceptive in type; its instruments—concepts provided by eidetic abstraction which are determinations of the primary concept, the concept of being, and judgments which are related to the primary intuition of the first principles—are instruments through which the intellect has a vision or perception of its own. For the intellect *sees*. More or less confusedly or distinctly, and in a parcelled-out manner, the intellect sees what Aristotle called τὸ τι ἦν εἶναι, the intelligible features of that which the things touched by our senses *are*. And by virtue of the inner necessities involved in the concepts themselves,—either, in the *primus modus*

[1] *The Range of Reason*, p. 8.

dicendi per se, because the predicate pertains to the notion of the Subject, or, in the *secundus modus dicendi per se*, because the subject pertains to the notion of the Predicate, which is its *propria passio* or immediate property,—the intellect sees immediately or intuitively the first principles of reason. And the reasoning is a transference of evidence which makes the intellect *see* the necessity of the conclusion by virtue of what is seen in the premises. All this is grounded in the primary intuition, which is the intellectual intuition of being, or of the act of existing exercised by things.

Such are the instruments proper to philosophy, when the intellect's power of vision, oriented as it is toward the intelligible being, is organized in an articulate system of concepts, definitions and assertions, each of which is like an immaterial lens through which a given aspect of being is grasped.

2. I just emphasized the distinction between science and philosophy. This distinction was overlooked as a rule by the ancients. At the dawn of philosophical thought in Greece,—when the great Ionian poet-physicists explained everything by Water or Air or Fire or Polemos or the *plenum* and the *void*,—the ideal of a knowledge both *one* and *universal* was pursued by the human mind, still dreaming rather than conceptualizing wisdom, at the level of the interpretation of becoming and the world of sense appearances. Then, after Anaxagoras, Parmenides and Socrates, the ideal of the one and universal knowledge was transferred, with Plato, to the level of philosophy. But for Plato philosophy or genuine rational knowledge dealt only with the supra-temporal necessity of Numbers and self-subsisting Ideas; the world of becoming could not be the object of any science or philosophy; only a kind of symbolic knowledge, through myths and poetic imagery, was able to tell us something of the transient reflections of being on non-being. Aristotle realized that scientific knowledge of movement and of becoming was possible, and thus he founded Physics, or the Philosophy of Nature, as distinct from Metaphysics. This was a step of fundamental import. But for Aristotle the philosophy of nature absorbed in itself all our knowledge of nature; on the one hand it had to analyze the essence of material things and recognize the existence of the first Mover, and on the other hand it had to explain the detail of phenomena.

So the formal perspective was everywhere the perspective of being. Outside of certain special fields like astronomy, optics, harmony, the study of phenomena consisted for the ancients of general interpretations conducted under the light of philosophy, and essentially oriented toward an ontological knowledge and analysis of things; interpretations which were less certain, more dependent on simple probability and closer to simple opinion, the nearer they came to the detail of phenomena. And this continued to be the case in the Middle Ages and right down to the seventeenth century. In the ancient treatises on natural philosophy we find long discussions about meteors, explanations of rainbows, snow crystals, etc. The questions which are called scientific today did not constitute a specifically distinct discipline, they only dealt with particular applications requested by empirical facts, and were just a chapter of philosophy. Descartes held the same position. With him the royal power, as to the explanation of nature, shifted from metaphysics to mathematics, and thus Descartes was, in actual fact, at the origin of the modern distinction between science and philosophy; but he himself did not make the distinction. His geometrical physics, his optics, his theory of tourbillons were for him the true philosophy of nature, and his treatise on meteors was a book of philosophy. He even emphasized the unity of our intellectual approach to reality still more strongly than Aristotle and the mediaeval doctors did.

It is my conviction that the Thomists of our day have not only to accept willy nilly the modern distinction between science and philosophy, but to recognize its specific character and to establish it on the rational foundation of a sound critique of knowledge. Nothing would be more useless and detrimental for Scholastic philosophy than futile attempts at any kind of *concordism* which would make Einstein and Aristotle bed-fellows occupied with the same kind of truth and explanation. Thomist philosophy and modern science do not need to be reconciled, they are in natural accordance, on the condition that we do not dream of making the physicist subservient to our philosophy, or our philosophy subservient to the physicist, and that we do not try to build a philosophy of nature on Einsteinian space-time or to derive free will from physical indeterminism, or, conversely, that we do not feel obliged by nuclear physics to reject the philosophical theory of matter and form. We have, on the contrary, to distinguish the

empiriological approach and the ontological approach more sharply than modern philosophers usually do, and, thanks to a critical elucidation of the degrees of knowledge, to stress the fact that the scientist and the philosopher can both progress ad infinitum in their own realm without coming into conflict because they do not fish in the same waters. This is the only way to do full justice both to science and philosophy, and, at the same time, genuinely to free Thomist philosophy from its accidental association with an imagery provided by a pseudophilosophical explanation of phenomena which has been ruined.

Modern science has done philosophy an immense service in delivering it from the essentially alien concern, which had oppressed it for so long, of explaining phenomena. If we consider the requirements of objective intelligibility, there is no necessary link between the mechanics, physics and astronomy of the ancients and the metaphysics and natural philosophy of the scholastic tradition. The whole edifice of the experimental science of the ancients could fall in ruins; this immense wreck could seem to hasty minds as of it were the ruin of all the ancients had thought: in reality their metaphysics and their philosophy of nature, in their essential principles, have been no more affected than the spiritual soul is altered by the dissolution of the body. I am ready to admit that the position of a soul without a body here on earth is rather uncomfortable, and that it is urgent for Thomist philosophy, once the above-mentioned purification has taken place, to recover its organic relations with the grand totality, the life and activity of the sciences,—this I shall try to point out in the second part of my paper. But I submit, on the other hand, that we do not have to conceive these organic relations with contemporary science in an uncritical and illusory way,—beginning again the old story which was so harmful to our forefathers. This would be all the more unforgivable since contemporary science itself is fully aware (as opposed to the science of the ancients) of its own phenomenal, non-ontological and non-philosophical character.

I alluded a moment ago to the way in which Descartes conceived the unity of the sciences. Knowledge, for him, possessed the very same unity as the mind, that is, the human soul or the human self. In other words he did not admit that specific diversity in nature which Thomas Aquinas recognized in the various

intellectual virtues: because for Descartes there were no such things as accidents, qualities or virtues distinct from the substance of the soul. As a result the diversity of habitus or virtues became only a diversity of functions in a single whole, essentially one and indivisible; the function of metaphysics was to guarantee the validity of knowledge; and the very body of the knowledge itself was that *scientia mirabilis* which had been revealed to him in his famous dream of November 1619, the universal mathematics, the mathematical explanation of the entire physical world.

This theory of Descartes proved powerless, and even senseless, with respect to the real development of the sciences, which, as I observed at the beginning, were to manifest a growing and swarming specific multiplicity; it had an impact only on the advent of the popular myth of "Science" among the average idolators of the goddess Reason and the god Progress, her divine Spouse and Handyman. But Descartes' theory warped philosophy. On the one hand, raising human knowledge to a divine condition (for only in God is knowledge identical with the intellect and the essence of the knower; and just as for Leibniz *dum Deus calculat, fit mundus*, so, for Descartes, while the human mind calculates the world is revealed in science), this theory was a first step in that progressive deification of man which came to completion in Hegel's philosophy. On the other hand it boiled down in reality to a dismissal of wisdom to the advantage of science, and foreshadowed the disintegration, bewilderment or complete subservience of metaphysics which was to take place in a relatively short space of time.

3. There is indeed a knowledge which is both essentially one and truly universal in the speculative or theoretical order. It is metaphysical wisdom. Its intelligible perspective, founded on *esse*, the act of existing, is that of the highest degree of abstraction or eidetic visualization, in which being is grasped as separate (or capable of separation) from matter, and concepts and definitions are formed in the light of the intuition of being insofar as being. Hence the essential unity of metaphysics. At the same time metaphysics is truly universal knowledge since it is as ample, in the order of speculative knowing, as being itself in the order of reality.

But there is a price paid for this universality, and we are more aware of this fact than the ancients were. Metaphysics appears to us in its genuine garment, which is not the rich, diamond-studded mantle of an empress of the world, but rather the simple and humble robe of a hermit who has chosen voluntary poverty. The superiority of metaphysical wisdom, at the peak of human natural knowledge, comes from the very fact that it is detached from worldly riches, and above them. I mean to say that it has given up any claim to explain the detail of phenomena and the infinite marvels of experience. And it has carried along the philosophy of nature in this sort of superior detachment, to the extent to which the philosophy of nature, at its proper level, is also wisdom and deals also with being, that is, being as mutable.

The universe of metaphysics is infinite in scope, as vast as the world, and much more, since metaphysics can attain to the prime cause of the world, to the Pure Act in its divine transcendence. But the universe of metaphysics is limited in inquisitory and explanatory competence, it leaves to science the conquest of the treasures of the earth and the laws of phenomena. Metaphysics contents itself with the knowledge of the supreme or primary causes and raisons d'etre, and of the superior intelligibility which is to be found where some aspect or property of being insofar as it is being can be grasped in things and deciphered in the obscure thickness of existence.

Thus it is that at the highest degree of natural or merely rational knowledge metaphysics exercises an architectonic power of unification over the whole fabric of the mind. This power is both a power of illumination and inspiration and a power of order and organization. It is a power of illumination and inspiration, not with regard to the ways and principles of explanation peculiar to the other fields of knowledge, but with regard to the general soundness, the basic equipment and the fundamental attitude of the human mind which, in a given state of culture, puts into play the ways and principles in question. And it is a power of order and organization, which depends mainly on the capacity that metaphysical wisdom possesses to encompass itself and all the other degrees of knowledge through its reflexive or critical function. For the theory of knowledge is part of meta-

physics, and it is wisdom's privilege reflexively or critically to elucidate and defend its own principles as well as the principles of the other spheres of knowledge and the various sciences, thus making them aware of their own genuine truth and competence and their own genuine frontiers.

In a universe of thought or a universe of culture at the summit of which the role to be played by metaphysical wisdom were recognized, there would exist, by this very fact, a certain common agreement on primary verities and on the primary principles of the workings of the mind, so that such a universe of thought or of culture, however diversified in its specialized scientific fields, would escape being basically divided against itself. And there would also exist a certain unity of intellectual inspiration, thanks to which all possible conflicts at the various levels of knowledge would develop without winding up in a final babelian chaos.

Yet it is the unity of order or organization of which I just spoke which is, to my mind, of most crucial importance for the sciences. For there exist between the sciences and the great types of knowledge conflicts and oppositions which are stimulating and fertile because they proceed from natural tensions. But there are other conflicts and oppositions which are unnatural, and which hamper and warp the life of the mind because they proceed from misunderstanding and blindness. The roots of such unnatural conflicts and oppositions are on the one hand the ignorance in which the sciences and the great types of knowledge are (I mean in their representatives), not only of one another, but also of their own noetic nature, their own place in the hierarchy of knowing activities, and their own limits; and on the other hand the resulting claim made by each one to possess alone true methodological value and real power of explanation, and to deny to the others any right to exist. Today the place of metaphysics is being usurped by logical positivism, whose great discovery is that all assertions which are worthy of the intellect have no meaning at all. The only way to get rid of these evils is to recognize the proper field of competence and the autonomy of our various approaches to reality, at the various stages of the universe of truth, and the *unity of order* of human knowledge.

As I observed in another study, human knowledge has unity only as an ensemble of specifically differentiated intellectual virtues, which extricate from sensory experience an intelligible

content with specifically diverse powers of abstraction. "In the history of human knowledge we see now one, now another of these intellectual virtues, now one, now another, of these types of knowledge, trying, with a sort of imperialism, to seize, at the expense of the others, the whole universe of knowledge. Thus, at the time of Plato and Aristotle, there was a period of philosophical and metaphysical imperialism; in the Middle Ages, at least before Thomas Aquinas, a period of theological imperialism; since Descartes, Kant and August Comte, a period of scientific imperialism which has progressively lowered the level of reason while at the same time securing a splendid technical domination of material nature.

It would be a great conquest if the human mind could end these attempts at spiritual imperialism which bring in their wake no less serious damage, to be sure, than that which results from political imperialism; it would be a great achievement if the human mind could establish on unshakable foundations the freedom and autonomy as well as the vital harmony and the mutual strengthening of the great disciplines of knowledge through which the intellect of man strives indefatigably toward truth." [2]

II

4. Yet it is not enough to lay stress on the *unity of order*, as basic as it may be. There is another kind of unity, which is also indispensable, and which I would call *unity of integration*. For the various disciplines of knowledge are not only superordinate to one another, by reason of their "formal" approach, they are also in necessary intercommunication, to the extent to which they have to do with the same "material" set of reality or the same subject-matter, seen from typically distinct points of view. On the other hand, if the remarks put forward at the beginning of this paper are correct, it appears that in each case the unity of which we are now speaking is revealed at the level of that discipline of knowledge which is "supra-valent" or superordinate with respect to other ways of knowledge that are unified, not by commingling with one another, but by being integrated—*above* their own specific fields—to this superior discipline's own purposes, perspective and light.

[2] *The Range of Reason*, p. 11.

A kind of unity of integration exists, thus, between the philosophy of art and the various arts as well as the various fields of art criticism,—or between moral philosophy and inductive, factual disciplines like sociology or anthropology,—or between metaphysics and the philosophy of nature since mutable or material being is being, and therefore exemplifies in a particular and subordinate manner the laws of being *qua* being. But it is in the relationship between the philosophy of nature and the sciences of nature that we find the most significant and far-reaching instance of unity of integration.

I emphasized in the first part of this paper the specific distinction between the philosophy of nature and the sciences of nature. Though they pertain to the same *generic* degree of abstraction —speaking of the degrees of abstraction, which have analogical, not univocal meaning, and involve typically different approaches, I am bold enough to say, parenthetically, that Cajetan's and John of St. Thomas' classical interpretation can hardly be overthrown even by the Reverend Father Joseph T. Clark,—though the philosophy of nature and the sciences of nature pertain to the same *generic* degree of abstraction (the first degree of abstraction, which is founded on a certain nature,—material nature) by reason of the *terminus a quo* (the philosophy of nature and the sciences of nature similarly prescind from "individual matter"), they are, within this generic community, at *specifically* distinct levels of abstraction, by reason of the *terminus ad quem*, that is, of the positive approach to reality, which is ontological in the case of the philosophy of nature, empiriological in the case of the science; the ways in which the proper tools or instruments of knowing, the concepts and the definitions are formed and constructed, are essentially different in both cases: here concepts and definitions are resolved in being, and thus participate in the superior intelligibility of metaphysics, there they are resolved in the observable and measurable as such, and provide the mind with *entia rationis cum fundamento in re*, thus participating or aspiring to participate in the superior intelligibility of mathematics. And similarly the light in which the judgments are elicited is different in one case and in the other.

Nevertheless the philosophy of nature and the sciences of nature have to do with the same subject-matter, the world of

nature, the material universe. And as a result, because they enlighten us, each one in its own way, on the same mysterious reality, not only are they, of necessity, *complementary* types of knowledge, but it is also necessary that the sciences of nature should on the one hand enter the very work and life of the philosophy of nature with a supply of knowledge of their own, and, on the other hand, be given by it some kind of interpretation in its own terms.

This is the *unity of integration* which we are discussing. And so, through an apparent paradox which is quite normal indeed, what is at an infra-valent level—the sciences of nature—depend to a lesser extent on what is at a supra-valent or superordinate level—the philosophy of nature—than the philosophy of nature depends on the sciences of nature: the dependence of the philosophy of nature with respect to the sciences of nature pertaining, moreover, to material, not formal dependence, and being required by the very function of final integration which belongs to any superior discipline as such.

5. What, then, is the impact of physics and the natural sciences upon the philosophy of nature? Or, more precisely, in what way and according to what procedure does the philosophy of nature have to use the sciences of nature?

I should like first to observe that the notion of fact is an analogical notion, and that, accordingly, there are *philosophical facts* as well as *scientific facts*. A fact may be said to be a well ascertained existential truth. A truth is expressed in a judgment which links together two objects of concept. So a fact implies that a connection of objects of concept exists *a parte rei*. In other words, what we call a *fact* implies the activity of the mind, —judgment. A fact implies discernment, an act of the mind. It implies simultaneously a judgment made by the mind and a perception,—in the case of the philosophy of nature and the sciences of nature, a sensory perception. "This being true, it is clear that there will be as many different degrees or orders of facts as there are orders of abstractive visualization for objective concepts. In other words, the very discernment of a fact takes place at a certain degree of abstraction. Facts are not all of equal rank, they are not all grouped at the same level in the market-place of sense experience so that the different sciences may come and pick out the wares they need. Facts themselves

enter into the hierarchy of our knowledge. Wherefore there are common sense facts, scientific facts, by which I mean facts which are of interest to the natural sciences of phenomena, mathematical facts, metaphysical facts, etc. From these premises it follows that there are philosophical facts that are much more simple, much more general, much more evident and certain than the facts which are called scientific, i.e. the facts handled and interpreted by the natural sciences. For, as science progresses, these latter facts, especially in the physico-mathematical sciences, become points of contact of the real with increasingly complex constructions which have previously been set up by reason." There is, moreover, a philosophical critique of facts just as there is a scientific critique of facts. "And when a fact which is the result of absolutely general observation has been judged and criticized by philosophy, it can no longer be called a fact of common observation, for the light of philosophical judgment and criticism has intervened to make it a philosophical fact in the strict sense of the word. The fact that something exists, that a multiplicity of things exists, that knowledge and thought exist, that becoming exists, these are all philosophical facts." [3]

Thus, the philosophy of nature deals with *philosophical facts* which pertain to its type of abstraction and conceptualization: for instance "change and becoming exist", "the continuous exists", "successive duration exists", "there are in animals mental processes somewhat similar to sense and memory processes in man", etc. And to the extent to which such philosophical facts can be established from common experience philosophically criticized, the philosophy of nature is independent of the science of nature.

But the philosophy of nature does not and cannot deal only with such philosophical facts. Here we have that dependence of the philosophy of nature with respect to the sciences which I mentioned some moments ago. If it did not use also scientific facts for its own purposes, the philosophy of nature would remain intrinsically imperfect, and so to speak in an infantile state,—and it would fail in its duty of integration and unification.

Yet it is clear that scientific facts as such are adapted to science, not philosophy. They have been stated in the light of science, not of philosophy, and they are pregnant with scientific, not with philosophical conclusions.

[3] *Philosophy of Nature*, pp. 142-143.

How, then, can the philosophy of nature make use of them?

Philosophy cannot use them as "brute" scientific facts, I mean as data which have not been re-stated and re-interpreted by philosophy itself. This would wrong both science and philosophy, —inject in the statements of the former an ontological meaning which is not theirs, and impose on the latter the rule of notions which have only empiriological bearing. We can neither claim to make the soul appear in a test tube nor claim that there is no soul because it does not appear in any test tube.

But my contention is that philosophy, while taking scientific facts in their truly and genuinely scientific meaning, can and must connect them with philosophical truths and data previously known at the proper level of philosophy; then it illumines them, so to speak, in the manner in which the intellect agent illumines the phantasms, and reveals in them a significance which up to that time was merely potential, and which transcends the plane of science. Thus we have scientific facts re-stated or re-interpreted by philosophy in its own light and raised to the philosophical level. And then they are pregnant with philosophical conclusions because they have philosophical meaning, in other words because they have become philosophical facts. They are not philosophical facts from the start or by virtue of the impact of the Xrays of philosophical intelligence on common experience. They are philosophical facts in a final stage or by virtue of the impact of the Xrays which emanate from certain definite philosophical data upon scientifically elaborated experience.

The best way, I think, to make these things clear is to have recourse to some particular examples. The example I shall use today will deal with the question of hylomorphism. I should like to outline the methodological process through which, in my opinion, the philosophy of nature can make use in this case of scientific facts for its own philosophical purpose.

6. The first step will be a purely philosophical one, founded on originally philosophical facts, philosophical facts in the first sense I mentioned. The philosopher, starting for instance from an analysis of the abstractive function of the human mind, and of the fact that the object of the first apprehension is an intelligible quiddity which is universal in the mind and pertains to individual things in existential reality, will conclude that *there are essences* in the world of material nature. He can discern

and circumscribe the most generic essences; perhaps he cannot, except in the case of man, discern and circumscribe the specific essences into which material beings are divided.

Then the philosopher, starting from the consideration of being as the primary object of the intellect, will establish the validity of the notion of *substance*. For things exist, and being is first of all that being which is fit to exist *in itself*, that is to say, substance. Otherwise no being would exist. The notion of accident appears in an indispensable but secondary way, when we turn our attention to change and becoming: being *of* being, that kind of being which is a determination of the substantial or root being of things, or which is fit to exist *in another*. The substance we have thus brought out, in contradistinction to the accident, is not substance in the watered-down sense of current language and the language of the sciences,—something observable which possesses stable marks of identification,—it is substance in the fully philosophical or ontological sense: the primary being through which a thing subsists and exists, and which is the root of its activity, and which, taken in itself, is a pure object of the intellect and does not appear to the senses.

Finally the philosopher, starting also from the consideration of being, but under the aspect of unity, will bring out the notion of substantial or primary unity, or of what is *unum per se*,—in contradistinction to what is *unum per accidens*, or by reason of the bringing together of a multiplicity of substantial units, as is the case of a society, or also of an artificial whole like a machine.

These three data—there are specific essences, there is in the beings of nature a substance which is the invisible root of the accidents that appear to the senses, these beings are something *unum per se*, or endowed with substantial unity—are purely philosophical data. They are of no interest for the scientist, who is not concerned with them, because they are out of the range of his approach to nature.

Well, and this is the second step, once he is in possession of these three purely philosophical data, the philosopher turns toward the sciences of nature and their own data. He needs to do so, for he knows that there are specific essences, but he wonders what they are, or where they are, in what way they can be circumscribed. Science knows the infinitely variegated

diversity of nature; will science teach the philosopher what those essences are which he is looking for? The misfortune is that scientific knowledge is not ontological knowledge. The species of the scientist are merely empiriological or taxonomic species, they are not the ontological species for which the philosopher is looking.

At this point the philosopher is confronted with two possibilities. Either he will think with Mr. Mortimer Adler that the ontological species are very few in number, and coincide with those largest classes,—the realm of inanimate matter, the realm of vegetative life, the realm of animal life (not to speak of the realm of humanity),—whose intelligible characteristics or differences philosophical reason perceives. Or he will think that the ontological species, though they do not coincide with the taxonomic species of science and are doubtless larger, constitute a huge specific multiplicity within each of the above-mentioned realms.

7. Now comes the third step. If the philosopher subscribes to the positions of Mortimer Adler, then there is for him only one way to demonstrate hylomorphism. The fact chosen as starting point will be the change which occurs either in the case of the nutrition of a living organism, especially the human organism (whose substantial unity is certified by our consciousness of being a person), or in the case of its death and corruption.

And here the philosopher will not be satisfied with the observation of common experience, however obvious in itself, which enabled his colleagues of the Stone Age to be certain that there is an essential difference between a living and a non-living being. He will have to put to use all that data of the chemistry and biology of his time, and to analyze them in the light of the philosophical data he has established in his first step. He will have to deal with chemistry, as concerns the processes to which the materials of which food consists are subjected, and as concerns the composition of these materials which are complex structures involving a huge diversity of parts. And no doubt chemistry will not tell him what particles, in such complex structures, constitute the ontological units each of which is an individual substance. But be they atoms or molecules or constellations of molecules, it is enough for him to know that such ontological units exist, and that each of them is a substance one

in itself, and that this substance, belonging to the realm of non-living matter, is distinct in essence from the organism.

On the other hand the philosopher will have to deal with biology. Biology will tell him, for instance, that the organism elaborates within itself three kinds of materials: first, materials to be exploited for the production of inner energy; secondly, ferments or organic catalysts; thirdly, materials of construction, which are integrated in the structures of the living organism as such and are involved in its process of morphogenetic development. When it comes to this third category, one of the first scientific facts has to do with the existence, in the cell, of big molecules of protein that are endowed with self-catalytic properties by means of which they increase in volume. But this process of augmentation is not yet vital assimilation, any more than the process through which a crystal adds together the molecules which exist in its supersaturated solution. What characterizes vital assimilation is the fact,—here we have the crucial scientific fact,—that the foreign materials introduced into the cell are first broken down by it and then totally reconstructed by it, through the instrumentality of ferments, so as to acquire in their last detail the peculiar, and exceedingly diversified structure which is characteristic of the cell.

Such is the description given by the scientist. But the philosopher knows that the living organism, either unicellular or composed of a world of cells, is—from the very fact that the whole, in it, precedes the parts and forms them into existence—a single substance and an ontological unit *unum per se*. And he knows with full philosophical certitude that the essence of the substantial units which compose the food and the essence of the organism are specifically different, since the difference between a substance capable only of transitive activity and a substance endowed with immanent activity is a difference in the very essence of being.

As a result, he sees that the process of nutrition, considered in its ontological reality, consists in the production by the living organism, of a substance which is different in essence from the materials taken from the external environment, but which is but a *new part* of the *same* substance which is the individual substance of the organism. This is exactly what Aristotelian philos-

ophy calls *conversio alimenti intussuscepti in substantiam aliti.* And this is evidently enough to conclude that such a change is a *substantial change,* and that it requires prime matter as its subject, and that, consequently, material beings are composed of prime matter and substantial form.

8. Here we have, in my opinion, the most convincing proof of hylomorphism. Assuming the position defended by Mortimer Adler as regards the species, it should even be considered the *only* proof. Now I must add that despite the remarkable discussion offered by Adler, and the extremely refined and impressive logic of his arguments, I do not feel persuaded of the necessity of his position. For various reasons, the principal of which is on the one hand the fecundity of being, on the other hand the divisive property which belongs to matter, I am inclined to believe that material nature is exceedingly rich in specific multiplicity—an indirect sign of which may be looked for in the discontinuity between the sets of unified characteristics that differentiate the great types of dynamic organization recognized by science.

Let us, then consider this second possibility. Let us assume that the existence of a great diversity of ontological species in the material world has been established as a philosophical position which is not only likely, but certain. Then the proof of hylomorphism I just outlined will still remain valid, of course, and indeed the most valid proof. But it will cease to be the only one. The philosopher will also have to take into consideration other ways of establishing, perhaps with less demonstrative necessity, the philosophical fact of substantial change and the hylomorphic theory.

The questions which arise at this point are particularly difficult and subtle. For, as I just said, the ontological species are probably much fewer in number than the taxonomic ones. And even the most basic characteristics of the various types recognized by science are only empiriological signs deprived of cogent necessity.

I would say, nevertheless, that these fundamental taxonomic characteristics,—such as those which differentiate, in zoology, the insects from the vertebrates, and the great classes of vertebrates from one another, or those which in chemistry differentiate the elements of the periodical table,—such fundamental

taxonomic characteristics, if they are related to a previously established certitude, founded on serious philosophical reasons, that there exists in the universe of matter a large variety of ontological species, take on the value of signs affording us with a high probability that the types in question are specifically distinct ontological species or essences. Leaving aside the problem of the compounds, the philosopher—supposing he has been able to establish with certainty, for merely philosophical reasons, the existence of a large multiplicity of ontological species in the realm of inanimate matter—may safely assume as highly probable that the empiriological classification of the table of Mendelejeff is a valid sign of an ontological, specific difference between the elements (the isotopes being regarded as varieties of the species). Then he will reason on these elements as on empiriological images or symbols of real essences which are specifically diverse. The factor of probability will have to do with the validity of the images or symbols, while the factor of certitude will have to do with the existence of a multiplicity of ontological species, whatever they may be. And, given such certitude, the philosopher will also be sure that if science, in a future stage of its development, should cling to a different picture of the basic empiriological diversities in the realm of matter, this picture will provide him with other images or symbols which will similarly be highly probable signs of a real ontological diversity. Today, in any case, he is entitled to use the images and symbols that are at a level with the state of science in our day. And thus he may use with a high degree of probability the elements of the periodical table as symbolic substitutes for ontological species which are specifically distinct, and state, therefore, that the atomic transmutations verified by modern science witness to real substantial changes.

Thus can the philosophy of nature integrate the data of chemistry in its own structure and for its own purposes, and at the same time establish the hylomorphist theory in a highly probable way, which is a valuable complement to the strictly demonstrative proof with which I was concerned in the previous section.

9. Now a fourth step, I think, must be taken. It is not enough for the philosophy of nature to have established the hylomorphic theory. It must, thereafter, point out what interpreta-

tion should be offered, from the philosophical point of view, of the theories of physicists about matter. How can the ontological notion and the physico-mathematical notion of matter fit together?

The primary thing is to realize that the expression "structure or constitution of matter" does not have the same meaning for the philosopher and for the physicist. To the philosopher it means the structure or constitution of matter qua *substantial being*,—to the physicist it means the structure or constitution of matter qua *phenomenon*, or insofar as a consistent representation of it can be worked out through our procedure of observation and measurement.

These two concepts of the constitution of matter are both valid, but not at the same level or on the same plane. It is obvious that we should neither try to fuse them with one another nor seek in the one the principles or foundation of the other.

When physics speaks of matter (or mass) and energy, and states that matter can be transformed into energy and conversely, it does not in any way have in view what the philosophy of nature calls the substance of material things,—this substance, considered in itself (prescinding from its accidents) is purely intelligible and cannot be grasped by the senses or by any means of observation and measurement. The matter and energy of physics are physico-mathematical entities which are worked out by the mind in order to express reality, and which correspond symbolically to what the philosopher calls the *proper accidents* or structural properties of material substance (quantity and qualities). What we can say from the point of view of philosophy or ontological knowledge, is therefore that material substance, considered in such or such an element of the periodical table (then it is disclosed to us only symbolically, under the aspect of the "atom" of physics) possesses, by virtue of its proper accidents or structural properties, a certain organization in space (which is symbolically disclosed to us under the features of the system of electrons, protons, neutrons, etc. of physics) and a specific activity which derives from its very essence (and which is symbolically disclosed to us as the "energy" invested in the system in question). Then, when it comes to the case of atomic transmutation, the change which occurs in the system

of electrons, for instance the loss of an electron through some kind of atomic bombardment, will be regarded by the philosopher as a symbolic image, in the field of physico-mathematical entities, of what constitutes ontologically the *ultimate disposition* of matter which determines the substantial change, at the instant when the previous substance is "corrupted", and the new substance "generated".

10. Finally, as concerns no longer the hylomorphic theory, but the general relationship between the philosophy of nature and the sciences of nature, another aspect of this relationship must be taken into consideration: it no longer relates to the integration of the scientific data in the proper work and structure of philosophical knowledge, but to the impact of philosophical knowledge on science itself. I do not mean to say that any philosophical or ontological notion may enter the field of scientific explanation. But when it comes to the whole concrete fabric of the mind of the scientist, it appears that a need and desire for a deeper elucidation of the mystery of nature, which ontological knowledge alone can afford, spontaneously and inevitably develops in the scientist, from his very experience in his own particular scientific field; thus he tends to work out some kind of philosophy of nature; and the philosophical (now and then pseudo-philosophical) notions to which he becomes attached have in turn a vital repercussion on the general trend of his intellect and imagination, and, consequently, on his process, both unconscious and conscious, of discovery and creative invention.

This is a sign of the fact that, in the normal organization of human knowledge, the philosophy of nature provides the sciences of nature, not with "constitutive principles", but, to use a Kantian distinction, with *regulative principles*, which orient thought and research, and play their part principally in that pre-rationalized, pre-systematized, pre-scientific backstage where the most decisive initial steps are taken.[4]

[4] If we look at the problematic of contemporary psychology, we see in an especially clear manner how the scientist might be spared wrong philosophical extrapolations, or helped in the very understanding of his own discoveries by the regulative principles of a sound philosophy of nature. Cf. for instance two particularly remarkable studies by Sir Russell Brain ("The Contribution of Medicine to our idea of the Mind," *The Rede Lecture for 1952*, Cambridge University Press) and Dr. Gregory Zilboorg ("L'amour et Dieu chez Freud," *La Vie Spirituelle, Supplément,* February 15, 1953) in which helpful inspiration can be found in this regard.

The considerations I have submitted on the relationship between physics or chemistry and the philosophy of nature may be extended, *mutatis mutandis*, to the whole world of the sciences of nature,—including sciences like experimental psychology. I apologize for having dwelt on these problems at some length. It was an opportunity to make clearer (I hope) the positions I have propounded for a great many years, and which have sometimes been misunderstood by scholastic critics (I do not speak of the others) who are too much concerned, it seems to me, with literal but contingent aspects of the teaching of our common masters. But it was also required by the topic of this lecture. For we have in the particular problems in question a significant example of the way in which philosophy—and especially the philosophy of nature, whose realm is coextensive with that of all the sciences of nature together—is able to bring these sciences into unity, at the superordinate level of philosophy itself.

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COMMENT ON DR. MARITAIN'S PAPER

THE official title of M. Maritain's communication to this congress is: *Philosophy and the Unity of the Sciences.* This is the standard and familiar label for a cluster of important and intricate problems that have elicited the attention and exercised the abilities of competent philosophic analysts for more than a quarter of a century. It is undeniable that much sound progress has been made toward a satisfactory solution of these issues. A monumental repository of the results of past and current research is the *International Encyclopedia of Unified Science* in process of publication by the University of Chicago Press. But despite such significant advances the relevant questions are still wide open and provide an ample area for constructive and respectable disagreement among experts. As a member since its foundation of the *Institute for the Unity of Science* of the *American Academy of Arts and Sciences* and a frequent participant in its recurrent conferences on this central theme, I was delighted to be informed

in advance that these significant issues were to be discussed at the 1953 *ACPA* convention.

But I respectfully submit to the considered judgment of an attentive audience that under the title of *Philosophy and the Unity of the Sciences* M. Maritain has in fact contributed to the Association an essay on the theme of unity *between* the sciences and philosophy. Despite whatever intrinsic interest this alternative topic may possess, it is an altogether distinct and different problem which provides a notably less extensive area for profitable disagreement of informed opinions.

This disparity between title and content appears most clearly, I think, in a careful examination of the precise *question* posed and the explicit *answer* supplied in the paper. The question is this: since "of themselves, the sciences tend to divide and multiply, so to speak *ad infinitum*, will the human mind itself enter, as a result, a state of intellectual atomization?" The answer is this: metaphysics in general and the philosophy of nature in particular provide (1) "a unity of order and organization in intelligence," and (2) "a unity of integration" between the sciences and philosophy. Given M. Maritain's precise problem of the scattered fragmentation of the sciences, I respectfully submit that neither (1) nor (2) in any way provides a formula for their unity.

But it may further be questioned whether M. Maritain's precise problem is authentically real. For the very sciences which tend to divide and multiply *also* tend of their own interior dynamism to amalgamate and unify. Physical chemistry for example is not a third science between physics and chemistry. It is in fact the reduction of chemistry to physics. And Einstein's general relativity theory is not a fourth science alongside the sciences of electricity, gravitation, and magnetism. It is in fact the absorption of all three into a single unified scheme.

If furthermore I do not accept M. Maritain's challenge to overthrow the classical structure of the three degrees of abstraction, it is not because of a philosophical timidity. It is rather because one does not need to overthrow what has already collapsed. Here I am reminded of a parallel. It is sometimes said in cheap histories of science that Galilei "overthrew" the Ptolemaic system of astronomy. This is not true. The theory

collapsed with the disclosure to those who were willing to risk a look through Galilei's telescope, of the satellites of Jupiter, the phases of Venus, and spots upon the sun. The second degree of formal abstraction will, I predict, likewise collapse in the opinion of all those, if any, who will take the trouble to look into for example *The Theory of Groups* by Hans Zassenhaus (New York: Chelsea Publishing Company, 1949). M. Maritain admits without regret and with undisguised glee that "modern science has done philosophy an immense service in delivering it from the essentially alien concern, which had oppressed it for so long, of explaining phenomena." I look forward to the day when M. Maritain and others may come to realize also and with equally convincing evidence that "modern mathematics has done philosophy an immense service in delivering it from the essentially alien concern, which has oppressed it for so long and still does in some quarters, of explaining mathematics." One will then no longer speak of "mathematical entities built on measurements collected by the senses," when it is acutely realized that all measurement already presupposes a highly elaborate system of mathematical entities.

M. Maritain moreover speaks of the "explanatory symbols" with which mathematical physics works almost as if physics was *not* a science of the physical world itself. And here I should like to ask in what way, if any, "atom" is an explanatory symbol whereas "substance" is not?

M. Maritain finally here speaks as often elsewhere about how "science works, so to speak, against the grain of the natural tendencies of the intellect." Since 1935 at least I have always had the depressing impression that such remarks were intended to brand the entire enterprise of science as an intellectual perversion of immense proportions. Nor could I ever agree with that interpretation of them. I am very happy therefore to close these edited remarks with the report that M. Maritain admitted in forum discussion of this topic that he too considers modern science as a triumphant achievement of the spiritual intelligence of man.

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[Rev. Dr. L. M. Regis, O.P., was unable to supply the Secretary with a copy of his paper on the *Philosophy and Unity of Philosophy of Nature.* Herewith is included a brief summary which Dr. Regis forwarded to the Secretary prior to the Annual Meeting.]

PHILOSOPHY AND UNITY OF PHILOSOPHY OF NATURE

(1) Philosophy, defined as wisdom, is the vision of an order that is not built by our minds but exists outside of it. Order on the other hand, is a kind of unity: it is the least of all unities ("minima unitatum"); that which exists in a diversity as such, but it is still a unity, which can be either that of the whole in relation with its parts, or that of an end in relation with efficient causes. (2) Philosophy of nature, as philosophy is also the vision of an order that exists in the world of becoming. Order in the world of becoming is a unity that exists: either between the parts of a whole, that is matter and form in relation with the composite or the substance; or between the accidents of the substance as means of perfection of the substance; or between the different substances as a means of perfection of the universe. The unity of a philosophy of nature consists in this ordered vision of every substance in movement, as such, and of the totality of substances as tending towards the perfection of the universe.

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COMMENT ON FATHER REGIS' PAPER

Father Regis's detailed and integral study of unity in the philosophy of nature is itself an example of the unity of order. But he does not wish us to consider the order of his presentation. That is the second kind of order, an order which is reason's own doing, an order which consists in the formation and arrangement of concepts and their appropriate expression. I congratulate him on the order which he has achieved there. What he wishes us to consider, however, is not the excellence of his paper but whether what he has said is a veridical report of the first kind of

order—the order of external nature, which man's reason did not make but merely learns, contemplates, studies. Is that order what he has said it is, and yet not altogether as it is in itself but rather in its philosophical aspects?

I think we can all concede that order is a unity, yet "the least of the unities," as St. Thomas says. (*C.G.*, ii, 58) It is a unity of varieties, of things that differ individually, specifically, generically, or even in the very mode of existence (cf. *S. T.*, I, Q. 4, a.3 c). Order which takes in all these differences pervades the whole of reality, the relationship of all the things in the world to one another, and the relation of them all to their Creator.

Within this large scope Father Régis restricts himself to the subject-matter of the philosophy of nature, to things which have matter as one of their intrinsic components. In that restricted field he finds both a structural order, the harmonious arrangement of parts, and also a functional or dynamic order. This latter involves the activity of efficient causes operating toward immediate, intermediate and ultimate ends. The operative powers of substances give rise to accidents, both the proper and the contingent. But the very substances themselves are such that some are by nature subordinated to others in a dynamic arrangement that is called a hierarchy. Moreover, when we reflect that all creatures, including these bodily ones, hold not only their existence but their very operative powers through the efficient and simultaneous operation of the Creator, we see at once that they are all necessarily related to God, making the whole world one.

It is when we come to the last part of the paper that our own unity and harmony of agreement among ourselves is likely to be disturbed, and we are likely to show how much disunion there can be about unity.

Let me try to highlight or, "point up," some of the items that may be fruitful of discussion, with the hope that we may move a little closer to unity in our thinking.

First of all we might consider how mathematical science, as mathematical physics, differs from the philosophy of nature. And let me say this: Physics, bent on learning the ultimate integral constituents of material things, and the specific laws of those constituents, finds its way blocked by the failure of instruments

to reach those objectives, and must perforce fashion an hypothesis, called a mathematical "symbol," of what the ultimates seem to be; and then takes the symbol as the proper object of the science. In other words, on the terms on which physics strives to know nature, that is the best it can do.

The philosopher of nature, however, attempts to know nature in terms which promise success in actually knowing the things themselves, and not some substitute construct, such as an hypothesis or symbol. There are many things about natural bodies which science learns, which the philosopher can never learn by his approach, but what the philosopher does learn will be the actual things themselves.—Perhaps I had better leave that point stand without further elaboration, lest I fall into disunion with you and with myself.

We cannot, though, dodge the fact that we have committed philosophy to the claim of knowing beings, existing in their own right, instead of knowing only some proxy that stands for the beings. But in touching being we touch the proper object of metaphysics. We may wince a bit at this, as having committed ourselves too far, because we are now involved in the problem of disentangling the philosophy of nature from general metaphysics.

As is clear from the paper just read, here is a point on which the masters disagree. And we can hardly pretend that this leaves the disciples free, for we, too, aspire to be masters, or at least to follow masters intelligently and not through feelings of loyalty alone. If, then, we say that "ens mobile" is the proper object of the philosophy of nature, we have the choice either of separating the "mobile" from the "ens," or of letting the ens swallow up the mobile in the proper object of metaphysics.

Father Régis's escape from this dilemma is to start where all our knowledge starts: sensible, or perceptible, things. Since that area of knowledge can be delimited, by harking back always to the beginnings of knowledge, and thus kept from fusing with the knowledge which we later acquire of other things, we can successfully delimit the proper object of the philosophy of nature. We can thus vindicate a field for this philosophy as distinct from both science and metaphysics.

It will all turn, of course, on the point whether the natural philosopher's "abstractio totius," the grasping of the nature of

the material thing itself, is a genuine operation of the mind, that can distinguish itself from statistical knowledge on the one hand, and from formal abstraction, or the exclusion of matter, on the other.—But this is deep water, and it is perhaps inviting you more strongly than it is tempting me. So I had better let you take the plunge.

But I must add that what I mean by statistical knowledge is what is currently meant today by "science." Science simply discovers uniform structures and uniform sequences. With that, science is through. If the man who has done that wishes to go on further, he is not a "scientist" any longer. He is a philosopher of nature.

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PHILOSOPHY AND THE UNITY OF MAN'S ULTIMATE END

I

WHEN a child obeys or disobeys a mother's injunction, e.g., not to cross the street alone, an event has intruded itself into the world which has ever confronted men with its specific mystery and wonder. I shall try to examine that mystery.

Two things can cause an examination of the mystery to fail. It will fail if we miss the specificity of the mystery. It will fail also if our examination is an idle venture from the start.

Let us first, then, briefly locate the area of the mystery. By hypothesis no harm or good will come to the mother, whether the child obeys or disobeys. Mother will of course feel good or bad if she ever finds out what her child did, but her feelings are not the reason for her command. By hypothesis also no harm will come to the child if he disobeys, provided only that he be very careful not to cross alone until the street is perfectly clear. Lastly and also by hypothesis no good will come to the child if he obeys and is nevertheless knocked dead by a car which comes skidding on to the sidewalk after him. Thus, no harm or good accrues to the child under the conditions stated, whether he obeys or disobeys. No harm or good! But this

belies the deepest convictions of mankind! Men know that they flourish most even when their obedience brings death. *Dulce et decorum est pro patria mori.* Men know that they are wound to the very marrow of their being by a cowardice which buys safety. "He fled full soon on the first of June, and bade the rest keep fighting." It is from our most solemn conviction that our chuckle over that line explodes, a conviction that a coward is no man to tell anyone what to do. In truth, if good and evil are equated with physical well-being and physical harm, it is quite clear that in the example given, good and evil are changing their visages under our very eyes. The specificity of the mystery now begins to appear. On the one hand, "no harm can come to the good man in this life or the next." [1] On the other hand harm does come to the good man in this life, and the "wicked prosper," as the Psalmist complains. Here then is the question: what is the good which men choose and thrive thereon, even though their choice of it cost them their lives? Alternatively, what is the evil which men choose and mortally sicken thereat, even though they may flourish like an herb? Quickened or sickened by a food we never eat, we ask: what is this food upon which we mortals feed, that we are grown so great—or small?

Our examination may fail, secondly, if it is an idle task from the start to examine ourselves at those decisive moments when we make our decisions. Who cares about those intimate moments when men decide for or against the moral good? Besides, there are other moments far more revelatory of mankind than are the moments of his moral decisions, the moments when he is an artist or maker, for instance, or the moments when he is speculating about the nature of things. On two counts, therefore, it would seem that our venture of examining the mystery of human commitment is foredoomed to bring little result: to know oneself at the moments of one's commitments is an uninteresting bit of information; besides, there are bigger fish to fry: the knowledge of man's works and of man's knowledge. The mystery, in short, of human commitment doesn't appear very attractive after all, or at any rate not nearly as attractive as investigating man's works or thoughts.

[1] Plato, *Apology*, 41 ff.; cf. *Crito*, 54.

"To depict himself, what a silly idea," Pascal thought of Montaigne's avowed purpose in writing his *Essais*. Silly indeed if Montaigne's self-portrait was to gull himself and his readers as a hostess' "I love your hat" may gull herself and her audience. Silly also if Montaigne's self-revelation was to reveal only Montaigne. Not at all silly, however, if a self-portrait catches the sitter at the decisive moments of his real commitments, for it is then that are revealed the greatness and misery—of what? Of Montaigne? Not at all. The greatness and misery of man, and Pascal is the first to admit it.[2] No idle venture, then, is it to examine the mysterious commitment we make of ourselves to good or evil. It is precisely here, in our choices, that we *are* ourselves, and so it is precisely here that we may know ourselves.

Should one protest that man is most himself in his arts and sciences, and that it is therefore there, in his arts and sciences, that one may learn most about him, it may be remarked that, although a man may "sack the sunset and cram it into his hold," he cannot nevertheless either set his argosy forth or bring it back safely into port ladened with booty without wishing to. Most certainly, to wish for the riches of Ormus and of Inde is not forthwith to have them. Yet the riches of the arts and sciences, and the proper use of both will not be ours without wishing to get, to know and to use them well.[3] This wish is a commitment. Thus, commitment to the venture of knowing and making things precedes, accompanies and crowns the venture itself. We shall not set sail to get them nor shall we come back safely into port with them, unless we wish to have, to keep, and to use well the treasures of knowledge. Our choices are not

[2] Montaigne, M., *Oeuvres choisies*, Hatier, Paris, 1928, p. 35. Pascal, B., *Pensées*, 62 and 64, texte de L. Brunschvicg, Nelson, Paris, 1934, 62, p. 65: Vd. 64: ce n'est pas dans Montaigne, mais dans moi, que je trouve tout ce que j'y vois. Montaigne could have said exactly the same thing about Pascal. It is true that Pascal found richer hunting in his *moi*.

[3] The basic relation between intellectual and moral virtues seems to be this: the acquisition, cultivation, and good use of knowledge requires the will (*Contra Gentiles*, III, 26). For further relations see *De Virt. in Comm.*, a. VII; *Sum. Theol.*, I-II, 57, 1, ad *Resp.*; *In III Sent.*, d. 23, q. 1, a. 4, *quaest. un., sed contra*; *Sum. Theol.*, I-II, 16, 6, ad *Resp.*; 17, 6, ad *Resp.*; II-II, 166, 1, ad *Resp.*; 166, 2, ad 2; 167, 2. Cf. Gilson, E., *Wisdom and Love in St. Thomas Aquinas*, Marquette University Press, Milwaukee, 1951, p. 42, fn. 3; p. 45, fn. 5; p. 49, fn. 8; p. 54, fn. 22.

always attended by success, yet there is no success without choice.

Besides, to return to our starting point, the commitment itself to any venture, whatever be that venture's success in terms of value received, is the real touchstone of success or failure. Lazarus failed, on any human accounting. Yet he succeeded withal. Dives succeeded, on any human accounting. Yet his was a resounding failure. Indeed, even the commitment to an honest mistake is far better for a man than a dishonest commitment to a howling success. The good man may clumsily knock things to pieces—he should be instructed and, failing instruction, prevented from doing harm, but he will not knock himself to pieces. Something is salvaged from an honest man's mistake, viz., his honesty, and this is what counts. The evil man, however, even though he may not knock other things to pieces—on the contrary, will most assuredly knock himself to pieces. It is his commitments which make a man good or bad, not their success, which may or may not ensue. Not that one may be disinterested in success. Far from it. Yet to have a fine house is not the same as to live well in it. This, the good life to which good men are committed and bad men are not, this remains a matter to be wondered at and examined.

II

The first feature to notice, because it is the first feature there is, about moral commitment is that there is a sense in which it is already made for us. As the vine is committed to growing grapes, so are we committed to loving the good. Neither agent has anything to do about the matter. One might say that all agents are "stuck" with their basic commitment. If "by their fruits ye shall know them," the reason is because by knowing *them* you may also know their fruits. Figs do not grow on thistles. It's a matter of structure. Structure indicates what sort of job agents are up to, and the structure of human agents indicates that the job *they* are up to is nothing short of the best.[4]

In order to grasp this situation we are in let us start from the basic insight that things differ. If they do, there must be

[4] *Sum. Theol.*, I, 18, 3, ad *Resp.*

some reason why they do, even though we cannot always know that reason. The name for the reason why things differ is formal cause. Sometimes, as was just said, we don't know what the formal cause is. Sometimes we do know. For example, the formal cause of hot water being hot is heat or the hot. The formal cause of *bacillus anthrax* we don't know. At least I don't know. No matter. Whether we do or don't know what the formal cause of difference is, we must always know that there is a formal cause of difference. Not to know this much, this is not to know at all. Not to know that different structures differ, this is not to know that structures are different; a situation which is as impossible to be as it is impossible to think. Now, the reason for differences is formal cause, a legal, a constitutional, a structural part of being. Formal cause sets a being up in ontological housekeeping, gives it a charter, a civil or corporative status, so to say. Fish, for example, are in the business of being fish by their structural characteristics of living, sensitive, aquatic, and so on. The "and so on" indicates that I know nothing more about fish. But I know and so does everyone else that fish are fish, and that everything else is in the same situation: it is itself and none other. To the reason why this is so we give a name, viz., formal cause.

The same formal cause may turn up in analogically different guises. 1) There is the formal cause which exists within the hide of some being, e.g., the hot of hot water. Call it an intrinsic formal cause. 2) The same formal cause may exist outside the hide of some being, but within the hide of the efficient cause of formal cause number 1 (the intrinsic formal cause). For example, the heating cause of hot water. Call this formal cause the extrinsic, or the originative, or the exemplar formal cause, i.e., it is the reason why effects are like their causes. That reason is: the likeness in causes to their effects. 3) The same formal cause may show up as intrinsic to the *action* of an efficient cause, e.g., the heating action of a heater. This number 3 formal cause is the same as the number 1 or intrinsic formal cause inasmuch as it is *in* the patient. It differs from the intrinsic formal cause inasmuch as it is *from* the agent. 4) The same formal cause may be viewed as that which can achieve a being. This number 4 formal cause is the same as the number 1 formal cause, but it is viewed *before* it actually achieves a

being. It is thus not intrinsic to, because not actually achieving, a being. It is not an exemplar, because it is not the *origin* of differences. It is not the formal cause which qualifies efficient operation, because it is viewed *before* there is operation. The possible term of action, this number 4 formal cause is the possible qualification of a being, the possible number 1 formal cause.

The possible qualification of a being might be the possible term either of efficient or of immanent operation, e.g., hot water from a heating agent, or thinking from a thinker. In either case the possible term of achievement of power deserves and has a name. Its name is object.[5]

The object is a term of a relation which involves both its term and the power which that term can achieve. Power is what can be achieved by an object. Object is what can achieve power. Power *is* the relation to its object. Object *is* the relation to its power. Without power there is no object. Without object there is no power. In other words, the very structure of power is its anticipation of its object; the very structure of object is its possible consummation of power. We are here faced with a relation which is particularly refractory to our understanding,

[5] On *intrinsic form* see *Sum. Theol.*, I, 76, 7, ad *Resp.*: forma ... facit rem esse in actu. On *exemplar form* see *Sum. Theol.*, I, 15, 2, *in corp.*: forma enim domus in mente aedificatoris est aliquid ab eo intellectum, ad cuius similitudinem domum in materia format. See too John of St. Thomas, *Phil. Nat.*, Pars I, q. XI, a. III, ed. Reiser, p. 240b 18: ... unico verbo ... exemplar est formans, quia non est in ipso formato, sed extra, et ideo ad tractatum de causa formali pertinet tractare de exemplari. Vd. *op. cit.*, Pars I, q. XIII, a. I, p. 273b 20; Pars IV, q. II, a. III, p. 76b 40; *Ars Logica*, Pars II, q. XXI, a. IV, p. 670 sqq. On *action form* see Aristotle, *Metaph.*, IX, 8, 1050a 23, 30; *Phys.*, III, 3, 202a 13; 202b 10; *De Anima*, III, 2, 426a 9; *Contra Gentiles*, II, 16: actus enim qui est agentis ut a quo, est patientis ut in quo . . . ipsa enim actio agentis in patiente recepta est actus patientis et forma . . . in ipso. Cf. *Sum. Theol.*, I-II, 9, 30. *Object form* may also be an end, but even when it is it *specifies* operation, whereas end causes the *exercise* of operation. *Sum. Theol.*, I-II, 18, 2, ad 2: objectum habet quodammodo rationem formae inquantum dat speciem. Cf. *In I Sent.*, d. 1, q. 2, a. 1, ad 2: Objectum operationis terminat et perficit speciem et est finis eius. Cf. also *In lib. de Anima*, II, lect. VI, ed. Pirotta, n. 305; *Sum. Theol.*, I, 25, 1; 57, 1; 77, 3, ad *Resp.*; 82, 3; I-II, 9, 1; 18, 6, *in corp.*; II-II, 117, 3; 153, 5; 162, 3, *in corp.*; *De Potentia*, VII, 10; *Contra Gentiles*, I, 48; II, 98; III, 1; *Quodlibet.*, VIII, 9, 1, *in corp.* The best definition of *object form* seems to be in *De Caritate*, a. IV, ad *Resp.*: ... potentia hoc ipsum quod est, dicitur in ordine ad possibile, quod est objectum.

because it is transcendental, i.e., both its terms must be understood together, because both its terms *are* together. Nowhere else except in a transcendental relation do we meet this situation. For instance, drop the "son" term of the father-son relation, the father term remains in our understanding as a being, but not as a related being, because now there is no "son" term to which a father must be related in order to be a father. Drop, however, one term of a transcendental relation, e.g., drop grapes in the relation which a grapevine bears to that object, then not only does the *relation* of vine to grapes drop, the vine itself drops in the sense that it cannot be understood at all because it isn't a vine at all. The whole being of a vine lies in being related to grapes. To generalize, what can achieve power, viz., the object, this *is* a relation to power; what can be achieved by an object, viz., a power, this *is* a relation to the object. If power is not related to object as to that which can achieve power, there is no power. Conversely, if object is not related to power as to that which can be achieved by the object, there is no object.

It begins to appear that the structure of agents involves much more than what is circumscribed by the area of their hides, much more than the composites they are of matter or subject plus form. The structure of agents involves also their objects. Outside agents' hides in a spatial sense, an object nevertheless fixes everything inside agents' hides to being what it is. If progeny were not, as object, part of the formal structure of animals, not only would there cease, pretty soon at least, to be animals; there would not have been animals to start with. If abnormal temperature in a patient of normal temperature were not, as object, part of the formal structure of the virus which caused the fever, there would have been no virus to start with. If the qualities caused by immanent action in an agent were not, as object, part of the formal structure of the agent, there would be no immanently acting agent. The generated, effects, immanent qualities, all these, as objects, define or describe power. All these are in the order of formal causality. Beings are not only their lumpish selves, not only what they have succeeded in adding to their lumpish selves. They are also the objects which can achieve them, even though those objects have not, as yet,

achieved them; indeed even though for some reason or other those objects never do achieve them.[6]

Recall once more that just as we always know there are formal intrinsic causes without always knowing what those causes are, so we always know there are objects related to power without always knowing what those objects are. No one, I suppose, has the foggiest notion why the destruction of living tissue achieves the power of some acids. What do *they* get out of burning tissue? Nevertheless to be tissue-burners of tissue not yet burnt, this is part of the structure of some acids. No doubt it is our ignorance of the nature of sub-human structures which forces us to describe *their* objects as that which they seek, for seeking is the sign that something is being sought, even though we can't always see why the sought achieves the seeker.[7] We're like a man with a fistful of letters destined to different addressees. There is a message in each letter we know, but we don't always know what those messages are,—except the message in the letter addressed to us. It so happens that one of these letters is addressed to ourselves, and we can read it. We know somewhat the object of human power.

The object of human power is absolutely unlimited. We often hear and say "so and so has everything." We know this is not literally true. Suppose it *were* true? Suppose one *did* have everything? Suppose, moreover, that unless a certain sort of agent *did* have everything, it would not be achieved; then *that* agent's object would be unlimited. This is what I mean by the object of human power, namely, an x which is and comprises everything. Let us see if that meaning can be validated.

Two lines of reflection seem to establish the proposition that only that which is and comprises all things can ever achieve human power. First, no object of human power is ever *experienced* as achieving it. Quite simply, no matter what we do

[6] Aristotle, *De Anima*, II, 4, 415a 18-22: before we can state what perception, or thinking, or nutrition is, we must first state what each power does; then, Aristotle goes on, we must go farther and state the *objects* of those powers, e.g., food, sense-object and the intelligible. Cf. St. Thomas Aquinas, *in h. l.*, II, lect. VI, ed. Pirotta, nn. 305-308; *Sum. Theol.*, I, 77, 3, ad *Resp.*

[7] Simon, Y., *Traité du libre arbitre*, Science et lettres, Liege, 1951, pp. 39, 40, fn. 1; cf. Aristotle, *Nic. Ethics*, I, 1, 1094a 3.

there's always something else for us to do. The experience is banal. Its implication is truly stupendous. No sub-human agent is ever in our situation. Short of man no agent ever can do any better for itself than by keeping right on doing what it does. The flustered Marshal McMahon said to the Senegalese soldier whom he was decorating for bravery, "So you're the negro, eh?" "Yes, Marshal." "Well, keep it up, son, keep it up." As if the brave soldier could help it! Just so, to grow grapes—nothing better for a vine. To be eaten—the grapes might not like it, if they had feelings, but as parts of a physical whole which sustain the universe it might be that nothing better could happen to grapes than to be eaten.[8] In human agents, however, nothing here and now ever quite achieves their power. Nature, yes, something achieves nature here and now. Nature is determined to being and doing one thing.[9] One thing a sub-human structure does, one thing it is, and in being and doing that one thing it thrives perfectly. Our peculiarity lies in this: though we may thrive better by doing this rather than that, we never thrive perfectly no matter what we do. We must conclude that, because object can achieve power, either there *is* no object of human power (because no object ever achieves human power); or if there is, it is not a second-best (because second-bests do not achieve power).[10] Thus we are left staring at our situation unless we open up a second line of reflection.

Human nature can be achieved only by that which is and comprises all goods, because human nature is an intellectual structure. Let us expand this second reflection a bit. It is self-evident that intellectual structure anticipates as its object, being. Dispute there may be about the nature of being, but no one ever can dispute that what he knows is being.[11] To deny this would be to jockey oneself into the position of maintaining either that one can know nothing, or else that one can know nothing else beyond what one does know. Now, once it is posited that being (*ens*) is the object of intellectual structure, there is

[8] Salmon, E., *The Good in Existential Metaphysics*, Marquette University Press, Milwaukee, 1952, pp. 19, 20. Cf. *Sum. Theol.*, I, 48, 2, ad 3.

[9] *Contra Gentiles*, II, 83, cum natura semper ordinetur ad unum....

[10] *Sum. Theol.*, I-II, 2, aa. 7, 8.

[11] *Contra Gentiles*, II, 83, cum natura semper ordinetur ad unum....

forthwith posited as the total object of intellectual structure that being which is unlimited, and thereby also that good which is unlimited. To knowing and loving the *Ipsum esse* we are structurally committed.

We must go into this. It is a commonplace that intelligent persons are unsatisfied with surface views, accidental resemblances, shallow remarks. We say, they are profound. Less figuratively, intelligent people see connections. Stupid people see no connections. To see connections, this is to discern identities. If we work this out at any level, we shall see that intelligence at any level is always busy about discerning identities.[12] Take the level of history. We see that although Socrates need not have drunk hemlock, nevertheless if he have drunk it, it is now impossible that he have not drunk it. Here intellect discerns the eternal, adamantine identity with itself of the given which need not have been given with the given which was given.[13] Next, intellect discerns within the constellation of Socrates' predicates, such as hemlock-drinker, philosopher, friend of Plato, etc., an identical x, perhaps unknown in its proper terms, but always known as an identical "clunk" which is not a predicate but which is the subject of all predicates. Here intellect is discerning that essences are self-identical. Thirdly, intellect may occasionally discern in that which is self-identical the *ratio* of its self-identity, viz., its definition. For instance, "rational animal" is the identifiable factor underlying Socrates' arguments, his cooking of his food, his falling in love in and out of season, etc.[14] Fourthly, intellect discerns that self-identical essences, defined or not, are such only by "is," and if not by an "is" which is identical with *them*, then by a cause of their "is" whose own "is" *is* identical with its own essence. Throughout all these identifications, historical, perinoetic, dianoetic, metaphysical, the factor which makes them possible is *ens*, and that factor by which the unknown becomes known because it is identical with the known, that factor bears

[12] Meyerson, E., *Identité et realité*, Alcan, Paris, 1908, p. 365 sqq. Simon, Y., *op. cit.*, p. 32.

[13] *Sum. Theol.*, I, 86, 3, ad *Resp.*

[14] Maritain, J., *Distinguer pour unir, ou les degrés du savoir*, Desclée de Brouwer, Paris, 1932, p. 399 sqq. Cf. Simon, Y., *op. cit.*, pp. 33-36.

within itself, as in its womb, anything at all, even the unknown God, provided only that it be.

Notice that our success in discerning identities has nothing at all to do with the drift of *ens,* the object of intellect, towards its explanatory source in *Ipsum esse.* I mean, once intellectual structure is related to *ens,* there's no stopping in the order of formal causality until intellect is achieved by knowing that *ens* without which there would be no *ens* at all.

Let us see this once more. To know that the one who just sneezed cannot now be one who did not sneeze, this perdurable identity of the given with itself is not the total object of intellectual structure. Why not? Because there are other *entia* kicking around, waiting to be known, e.g., non-sneezers, and these too can achieve knowledge. If they can, they too must be involved in *ens.* Consider, next, how we rise above the level of history. We know that sneezing comes from sneezers. This is very good, because it is not superstitious, but it is no more impressive than a reflection over an unlettered tombstone, "whoever he is, there he is." We must do more than identify formal intrinsic and formal exemplar cause. Intellect awaits further achievement. It strives to know the *ratio* of sneezers. Very well, surround sneezers with a sack of perinoetic predicates, make them stand forth even in terms of the dianoetic predicates which reveal what it is that is in the sack, there's still something left to know, viz., why there *are* sneezers. Unless sneezers exist or can exist by an "is" which is not identical with them (if it were identical, there would be nothing but a solitary sneezer), but which is caused in them by One with Whom His own "is" *is* identical, sneezers would not be. Yet we know they are, because we just heard one. And so, there is an *Ipsum esse* involved as a complete object of an intellectual structure whose object is *ens.* To this object intellectual power was related all along, because It alone perfectly achieves intellect's completion in its object.

In sum, structure or power is defined by its object. Object is always in some sense being. The object of intellectual power is being as being, that is, anything in which may be found the *ratio entis.* If so, then in the order of formal causality or object intellectual power cannot be achieved except by knowing the *Ipsum esse.* For, if the *ratio entis* excluded the *Ipsum esse,* it

would exclude precisely that by whose causality there are the beings in which we find the *ratio entis.* How in the world can *ens* get or be on its feet except by *esse?* How in the world can *esse* get anything on its feet when *esse* itself is not on its own feet? Now, *esse* is never on its own feet unless it be identically *ens,* or unless it be caused. But caused being alone cannot be. There must, therefore, also be a cause of being, i.e., an *esse* which gets all the rest on their feet. God is thus the complete object of intellectual power.[15]

When the relations of *ens* to *esse* move over to the status of being knowable or known—there would be such relations even if we were not around to know them, then *ens* presents to intellectual power the face of *ens verum.*[16] That is, it is because structure is *intellectual* that its object is named *verum,* yet the *verum* is *ens* all the same.

If I have seemed to scant the will structure of human nature, this is but an appearance.

Power related to object, structure is sometimes achieved, as when those who can hear hear. Sometimes that relation is not achieved, as when those who don't hear can—if they have ears. Now, absolutely every structure must seek, or flourish in, the completion of itself, because to do this is to be a structure. Structure which is a relation of power to object in the order of formal causality, is absolutely inconceivable in the order of *esse,* where alone there *is* structure, unless the object of structure be sought when it is not had, or quiesced in when it is had. A plant, which stays put in the order of formal causality, would not *be* or exist as a plant (here we are in the order of *esse*) unless it were growing or grown. To be growing or to be grown, this is to be a plant. To seek, or to quiesce in, structure, this is to be a structure.[17]

[15] *Contra Gentiles,* III, 25: et sic intelligere perfectissimum intelligibile, quod Deus est, est perfectissimum in genere huius operationis quae est intelligere.

[16] *De Veritate,* XXI, 1. Cf. *Sum. Theol.,* I, 82, 3, ad 1: et inter alios fines iste finis [(sc. verum, quod est finis intellectus)] est excellentior. Vd. p. ?, n. 18.

[17] *Sum. Theol.,* I, 5, 2, ad 2: ...bonum habet rationem finis, in quo non solum quiescunt quae sunt in actu, sed ad ipsum etiam ea moventur quae in actu non sunt, sed in potentia tantum. Cf. *De Veritate,* XXI, 2, ad *Resp.:* ...eiusdem rationis [(est)] tendere in finem, et in finem quodammodo quiescere ...haec autem duo inveniuntur competere ipsi esse.

This seeking of the intellect for the completion of its structure, or its quiescence therein, this is will. Will is the appetite of the intellect (subjective genitive), seeking or rejoicing in its structure. One might say that the will is the intellect's *tendere vel quiescere,* the appetite, namely, by which intellect's formal structure is made to be formal by being made to be.[18]

To say that the will resides in the intellect, this is not to deny that they are distinct powers.[19] On the contrary, to know is an entirely intellectual work; to will is entirely the will's work. To seek or to quiesce in completion, this is not completion. To wish to see, this is not to see. Nevertheless, one will never see who does not open his eyes and keep them fixed. Just so, to seek and rejoice in intellectual knowledge, this is not intellectual knowledge. Yet one cannot seek seeking or rejoice over rejoicing; one seeks and rejoices over the knowing of the object. Distinct powers, will and intellect are nevertheless engaged in different pursuits of the same thing, the completion of intellectual structure.

Will pursues and rejoices in the completion of intellect's structure. As intellectual structure's completion, the object is named the *true*; as pursued and rejoiced in, object is named the *good.*[20] The factor common to both is *ens,* and since *ens* includes as its

[18] *De Veritate,* XXIV, 1, ad 20; *Sum. Theol.,* I, 83, 3, ad *Resp.* Aristotle (*Nic. Ethics,* II, 5, 1139b 4) hadn't decided whether election was an appetitive intellect or an intellective appetite, but St. Thomas thinks it is rather an appetitive inellect. Cf. *Sum. Theol.,* I-II, 13, 1, ad *Resp.* and *De Anima,* a. XIII, ad 12: voluntas est in ratione....

[19] *Sum. Theol.,* I-II, 17, 6, ad 1; 9, 3, ad *Resp.*

[20] *De Veritate,* XXI, 1, *in corp.*: there are two factors in every being: the *ratio speciei,* and *esse ipsum.* Hence, there is a double perfection in being. Now, the intellect is perfected by *ens* only according to the *ratio speciei,* and yet, since being is not in intellect according to *esse naturale,* therefore *this* fashion of perfecting intellect is by way of a being which is *true.* (Cf. *Sum. Theol.,* I, 5, 2, ad 2: the only causal relation which *ens* has is as a formal cause, intrinsic or exemplar; *Sum. Theol.,* I, 16, 1, ad 3: truth is caused in us by things, but it's not their *truth* which causes our knowledge; it's their *being* (oratio vera est ex eo quod res est, non ex eo quod res vera est)). Another way being has of perfecting is according to the *esse* it has in nature, and it is in *this* way that the perfecting being is named the good. Now, the *verum,* which is the end of intellect, *est inter alios fines excellentior* (*Sum. Theol.,* I, 82, 3, ad 1): indeed, the *verum* of the vision of God is man's ultimate end, his good.

demonstrated top analogate God Himself, both powers are pursuing, each in its own way, God.

We may unwrap this once more. Structure is only in the order of formal causality; it may or may not exist, but if it exists, it will be such as it is—like the difference between character and behavior. Ask, now, what gets structure into production? *Esse*. Ask, next, what does *esse* get into production? Structure. Assume that the structure now in production or *esse* is incomplete. It will seek its completion, and when complete flourish therein. In no other way except by growing or being grown can structures exist. Agreed to this, we must agree that the power to seek, and to flourish in growth is achieved by growing and being grown, not by seeking or rejoicing in growth. This means that two powers are involved: the power to seek and to rejoice in completion; the power which is completed. We don't seek seeking, or rejoice over rejoicing. We seek structural completion, and this completion achieves a power other than the will, namely, the intellect; or better, this completion of the intellect by the *verum, is* the good which the will seeks and in which it flourishes.

Since structure cannot exist except as on the way to or in the state of completion, all agents bear within themselves structural "musts." And so do we. Our structural "must," our framework of behavior, is the "must" of loving the good, which is the true, which achieves the intellect. There's nothing moral about this "must," not yet. It is a rigid line from power to object. The "musts" of sub-human structures is their necessity of being related to a particular object, which is a particular good, which achieves *them* perfectly. The particular object does not achieve us perfectly, and that is why the total object of intellectual structure, as it is the total good, is the knowledge and love of God. Of course sub-human structures do not always attain their completion, nor need we. The point is: only "having everything" can achieve intellectual structure; certainly nothing less can ever achieve it. And "having everything" is knowing and loving God.

In sum, 1) structure is power related to object. Since object is in the order of formal causality, all we can say about structure is to define it, or to state our assurance that whatever be its definition structure is itself. There are no two ways of being oneself; either one is oneself, or one isn't at all. Now, if we

agree that to be oneself is a perfection, it certainly is not the perfection known as the good. 2) The good is that which makes structure to be structure by making structure to exist; that by which oneself *is* oneself because oneself is or exists. To be oneself, that is a matter of structure. That oneself be or exist, that is another matter, a matter of the good. Plants, as plants, are plants whether they exist or not, and so for everything else; but plants would not exist as plants, and so they would not *be* plants except by an object in *esse* by which, being made to be, they are made to be plants. For example, plants would not be plants without water, sun, etc. Water, sun, earth, etc., these are good for plants. The good is thus that perfection in *esse* by which formal structure exists. One might say that whereas object is that which can achieve power, the good is that thing in *esse* by which power is achieved. And that is why the good is pursued or rejoiced in, because, namely, structure in *esse* must either be on its way to or in the state of completion. 3) The object of intellectual structure is the true. The completion of the intellect by the true, which is sought and exulted in by the will, that is the good of man. 4) The good and the true are both unlimited terms. This means that there will not be any achievement of intellectual structure except in Truth and Goodness Itself. 5) The situation described is thus a structural situation in *esse*. We must be achieved, if at all, by knowing and loving God. Whether we do know and love God is not the point. The point is: unless we were made for vision and love, we would not be at all.[21]

[21] Perhaps the whole matter put at a different level might be more familiar. Were one of us asked why he came here, he might say—of all things! that it was in order to listen to papers on philosophical subjects. And were he asked why on earth he wished to listen to such papers, he might say that it was in order to gain philosophical knowledge. Further pressed to justify his quest for philosophical knowledge, he might grow snappish with "I have to teach this stuff." More questions would only elicit more of the same kind of answers—and more irritation. None of us likes to be pushed to reasons which are identified with the very substance of his being, because none of us knows very well the substance of his being.

One thing we do know, however, is that we are here because, all things considered, we think this is the best place for us to be here and now. Later, thank God, we shall find something better to do, but not now. What goes on here is this: we are all wishing and hoping for the best. We know perfectly well our presence here is only a "best" here and now,

III

The necessity we are under of pursuing as good the completion of intellectual structure, which is the *verum*, up to and including the knowledge and love of God, this necessity being a structural necessity, it would seem that like all structures we must needs, barring chance, attain that object.[22] Not so. This is one more stage in our commitment.

We must commit ourselves to the exercise of our power. This is a free commitment.

Structural commitment is all on the side of formal causality, all on the side of the object. If we act, we must act because we think it good to act. We cannot act outside the framework of the good and the true. They are the canvas upon which alone we may paint.[23] This is a matter of structure. But we may paint in black or white, or we needn't paint at all in a given case unless we wish to. This is a matter of free decision. To loving the good, which is the achievement of the intellect by *verum*, we are necessarily committed, but we commit ourselves freely to loving this instance of the good. And we can say the same thing about happiness, a transcription in terms of experience of the good: we must love to be happy, but we freely choose where we shall find happiness. So for the last end: we are necessarily committed to the last end, but not to the last end to which we *do* commit ourselves. We seek the good, or happiness, or our last end, necessarily in so far as this triad is not found in any concrete instance of them—and it is *never*, as viewed transcendentally, found in any concrete instance of them. We seek the concrete instances of this triad freely, even the concrete instance which is God. *The* good, which is and com-

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not an absolute "best." Now, our wishing to know the absolute best is the structural commitment I have been analyzing. We never learned this commitment, were never taught it, cannot teach it to others. It is our endowment as intellectual structures. We are so to say, "stuck with it," hog-tied by it, just as the vine is stuck with growing grapes. The tremendous difference between the vine's commitment and ours (the vine is stuck with a particular job; we are stuck with the best of all jobs) should not blind us to the fact that we're both stuck.

[22] *Sum. Theol.*, I-II, 5, 5, obj. 1 et ad 1.

[23] Maritain, J., *Neuf leçons sur les notions premières de la philosophie morale*, Téqui, Paris, 1951, p. 83.

prises all good, this we do not seek as we seek *this* good. The good we seek necessarily; *this* good, freely. Happiness, which is the totality of the good which we can enjoy, this we do not seek as we seek this concrete embodiment of our well being; we seek happiness necessarily, this concrete embodiment of well being, freely. God we do not seek as we seek our last end. No doubt He *is* our last end, but we seek Him as we seek any other concrete end, viz., freely. We stake our capital upon one horse. Our capital is our necessary love of the good, of happiness, our necessary fixation upon a last end. We freely put this money upon this or that concrete instance of the good, of happiness, or a last end. We freely decide where we shall find the happiness which we must seek; where we shall place our total good which we must desire; where the final end which must motivate all desire is to lie.[24]

Because we can, if we wish, make bad choices, pick the wrong horse (knowing of course that it *is* the wrong horse), this in a way is too bad. An agent whose liberty or power to choose can be defective is in a parlous state. At any rate the possibility of evil choices is one with the possibility of good ones. Besides, the misery of possibly defective free agents indicates their grandeur when their liberty is perfected. In heaven the freedom of the blessed will be the freedom of an act which necessarily but without coercion knows and loves God, just as God's freedom is the freedom of the divine love which necessarily and without coercion loves Himself.

To come back from the heights, we must ask at this point just how, when we freely decide the find our good, or our happiness, or our last end, in some particular instance of that triad, just how is our capital *found* in the particular instance? In other words, how shall we describe the unity of our necessary love of the good, which is consubstantial with our natures, with our free love of an instance of the good, be that instance God Himself? How does one find one's total, concrete, infinite good in a finite participation of the good?

Observe that whatever be the answer to that question, this is exactly what we do, and in so doing we are convinced that we flourish. Men choose to die for justice, and whether or no we

[24] Simon, Y., *op. cit.*, pp. 52, 53.

emulate them, at any rate we applaud the greatness of their decision. They, we think, are good men, the very flower of humankind. Why do we think so? Why are they?

No doubt there is a unity by demonstration between particular goods and the good which is God. It can be proved that God exists, that He is the end of man, that between the decision to die for justice and the vision of God there is a necessary connection. Still and all, proof is not the vision of God either here or hereafter. It is not because of syllogisms that men will die. It's not in the unity of major with minor through a middle term that we find the unity of the particular with the infinite good. The unity of the infinite good with an instance of the good is a unity of love. We wish to find our total good in the particular. Obviously we do not do this without reasons, but it's not our reasons which contain God. It is our love. It is in the love act that we identify the total good with the particular. This unity is not the unity of a proof. Proved or not, the identification of the infinite analogate of the good with the finite participation of It is made by a commitment: we wish it so.

And because we wish it so, it *is* so. It is so because, were it not, the intellect could not be achieved by the *verum,* which is man's *bonum*; yet only thus can intellect be achieved. We may see the matter in this way: assume that there *is* no identity, by free commitment, of the infinite with the finite. Then it would be question only of a mistake, and anyone can make a mistake without blame. Yet a mistake *here* is a contradiction in terms precisely because it would be a willful, blameworthy mistake, i.e., an error. Anyone can bet on the wrong horse; but no one can be blamed or praised for betting on the wrong horse (we can only envy or commiserate his luck). Now precisely, we praise or blame a man for identifying or refusing to identify the good with an instance of it, because he is free to do either. Hence if a man is wrong here about the identification, or right about the lack of it, he is in culpable error which is inculpable, or in inculpable error which is culpable. A contradiction in terms either way.[25]

To find our happiness, our good, our last end, in death for justice' sake, this is not a lie, not merely because men have

[25] *Sum. Theol.*, I-II, 19, aa. 5, 6.

never thought so, but because it cannot be. Certainly we shall not *experience* our complete happiness in such a decision, nor shall we experience in it our total good or our last end. Yet we must ask whether our happiness, experienced or not, lies in our decision to identify the total with the particular; and we shall ask the question in this way. Which one is better off? The just man who suffers for justice' sake, or the evil man who suffers not at all? Ideally the just man who does *not* suffer is better off than the just the man who does, or the unjust man who doesn't. And, come eternity, the just man will not suffer. Nevertheless, the just man who suffers now is flourishing in the possession of God now. He is flourishing, but not in the achievement of his sub-structures. You shall be whipped, scourged, crucified . . . (cf. *John* xvi. 2). He is flourishing in the completion of his intellectual structure.

Put it this way. We have many powers each ordered to its own good, and the good of each power is ordered to the good of the whole, viz., the intellectual structure of man. Should we pursue the object of one power so as to exclude the good of the whole to which *it* is ordered, viz., the achievement of intellectual structure, we should be pursuing an apparent good. We might rejoice over the apparent good, but only with the fictitious joy of a drunken man. We would not be really well-off with the achievement only of our sub-structures, not even as well-off as one whose sub-structures suffer for the good of the whole. What are sub-structures for if not for structure? Why do we eat, except to live? Why do we live, except to know? Why do we know, except to know God? Surely one may live to eat, but that way one achieves only size. The true good for man is the achievement of his intellectual structure by knowing God.[26] That achievement is accomplished here and now by having God within our free commitment to an instance of the good.

Accomplished? Yes, but secretly, darkly, in such wise as love tokens are but an earnest and presage of love's consummation. Consider the coordinates and the curve of love. First there are the coordinates, the lovers. These are God and man. God, the Infinite Lover, made man a lover of the good. A lover of the

[26] *Contra Gentiles*, I, 2, inter omnia vero....

good begins to exist because of Infinite Love, and beginning to be because of love, he begins *in* love. This is the direction of the curve. Next man decides, not by a decision *qua* judgment, but by a decision *qua* personal commitment, to find the good which he necessarily loved from his first breath, in a good which he knows is not the best, but which he also knows is the best he can compass, the best for him here and now. Here man cannot be in error, unless we accent the hypothesis that a good man is a living lie. The curve has now taken its direction. Man begins now to be, to exist, in love. True, he doesn't possess vision; but vision is possessing him, the vision of the beloved which "is the star to every wandering bark, whose worth's unknown, although his height be taken." Vision is possessing him as the vision of the sea is possessing one who is some distance inland; there's the tang in the air, the taste in the mouth, the faint roar of the surf . . . These are the unseen sea, the murmurs of eternal waters. Vision is possessing him not merely as an assurance of duty well done—it's a Kantian illusion to think that doing one's duty is the sole good for man; but as one to whom each good is the rustle of the best-beloved's garments, the touch of his hand, the breath of his face, the hair of his head.

The most mysterious aspect of this mystery is not the fact, nor the reasons, sophisticated or simple, which point to the fact. The mystery lies in our complete assurance that there *is* an identity between our total and the particular good of our own choice. Whether we succeed in thinking the matter out or not seems to make no difference. We know we are well-off only in committing ourselves to the best as we see it. As in the matter of a miracle where the wonder is not so much that miracles happen as that men believe they happen, so here: the wonder is not so much that good men stake their all upon one cast of the dice, and flourish therein—they do indeed; the wonder is their complete conviction, and ours, that they always win, i.e., the wonder is the conviction that they *have* the total in the particular. Certainly no discourse ever caused that conviction. Discourse might well teach them that such might be the case, but that there *be* such cases, such a conviction I mean, that our conviction on this point never wavers, this is a matter which only a love-act can cause, or better, this conviction is in a love act, and this act is without words. Thus it begins to appear that

there is a wordless dialogue going on between God and man, a dialogue no less clear because wordless. It is even clearer. Clearer, because the language of love speaks only in love—like music, which speaks, but only in sound. Read the program of a musical concert. What futile stuff compared to the music! Just so, lovers have a language, but it is not verbal. They sit silent in each other's presence, and they know.—*Da amantem et sentit quod dico.*

I resume. Delivered over to man in man's free commitment to the good as he sees it, God resides in that commitment as an ineffable treasure. We know we have our total good in our free decision in favor of what we think best for us here and now, and we know this not just because we can prove it. We know it because our commitment is of ourselves. To stake one's very self, this, in the order of operation, is to be one's very self. Should we not have our total good in that act, we would not be at all. For, to be a *good* man, this for a *free* man is to be.

IV

Now, surely the residence of God within man's free decision is more real and precious than the blood in his body. It is a taste which is not on the tongue, an odor which is not in the nostrils, a sound where nothing is heard, a vision which is seen though one's eyes be closed. In short, it is a good in which the fibres of our being exult in song, though we may feel nothing; like the good of health, only this is the health of spirit. *Expertus potest credere* . . . Yet the presage and token of the beloved's presence are not His presence. Here we are at the last stage of the mystery of our commitment.

Commitment by our structure to the good, and the further commitment by our free choices to the good as we see it, the absolutely necessary "must" of structure in *esse*, and the moral "must" of free structure in *esse*, these are the laws of nature and spirit. Spirit there cannot be unless its good be to see God. Yet there is absolutely no guarantee in nature, free or not, that man *will* see God. Faith and revelation teach us that man will see God, and that he will see God only by grace. But these, faith, revelation, grace, are so to say extra-curricular, outside the course of nature. In short, the Beatific Vision is absolutely gratuitous. It is entirely possible that the end of man have *not* been the Beatific Vision. And if it had not been, what then?

Observe that the question does not suppose the revelation that we shall, if committed to the good, see God. On the contrary, we ask what would be the unity of man's last end if it were not known that man will see God. The answer must of course refuse to avail itself of the data of revelation.

Only two answers are possible. 1) Man, whose necessary and free structure demand vision, would have had no end, which is vision. 2) Man would have had an end, but it would not have been vision; rather, it would have been an end within nature.[27]

Each answer has its peculiar torment. The torment of the first answer is a theologian's torment; of the second, a philosopher's.[28] Theologians—I have asked the dead and many of the living ones, theologians can't quite resign themselves to a situation in which man, however felicitously circumstanced, would never see God face to face. This is as it should be, that theologians be tormented, I mean. Dogma fired charity must needs have some of its sorrows in mystery. Philosophers can't quite see how the laws of spirit, which point to vision, can be fulfilled without vision. And this is as it should be. Philosophers must come to the point of realizing that their thinking needs grace if it is to remain good thinking.

I see no way to ease these torments. Observe, however, that even if there were a definitive answer to our question (what

[27] For a bibliography and an introduction to this subject see Donnelly, P. J., S.J., "On the Development of Dogma and the Supernatural," *Theological Studies*, VIII (1947), pp. 483-491; "Discussions on the Supernatural Order," *Theological Studies*, IX (1948), pp. 213-249, 554-560. Cf. also Pegis, A. C., "Nature and Spirit: Some Reflections on the Problem of the End of Man," *Proceedings of the American Catholic Philosophical Association*, XXIII (1949), pp. 62-79. Vd. also pp. 47-61.

[28] Cf. Charles J. O'Neil, "St. Thomas and the Nature of Man" in *Proceedings of the American Catholic Philosophical Association*, Vol. XXV, 1951, p. 46. Cf. St. Thomas Aquinas, *Contra Gentiles*, III, 48: in quo satis apparet quantam angustiam patiebantur hinc inde eorum praeclara ingenia. St. Thomas seems to be thinking of Aristotle principally, a sort of genus of philosophers: "philosophus", he calls Aristotle. The "in quo" seems to be the necessity of finding an end for man *within* nature, and this, the philosopher knew, won't do. *Inde angustiae*. On the other hand, for a theologian theology cannot be a science without a philosophy; and if there be no end, there is no philosophy.

would have been our state had we not known that our end is the Beatific Vision?), our easement would be only intellectual. The speculative resolution of the question would have little to do with the practical situation.

Practically, all we need is the assurance of the unity of the finite with the infinite in our free acceptance of the good as we see it. This assurance is present because the union is one of friendship. All that has been said about our necessary commitment to the good, about our free commitment to the good as we see it, all this means nothing if not friendship. God causes us to love the good, which He is; and we cannot fail to love the good, which He is. He next invites us to place or find the good, which He is, in an instance of it which is either ordered to Himself or is Himself. These would be strange antics indeed on His part if He were not a friend. Now, there is no doubt that friendship is always a venture. One doesn't know what the riches are in the country of the beloved, what one is letting oneself in for in loving the other. No matter. One thing is certain: we shall always be at home with a friend. Thus, though the *sequela* of Divine friendship is not necessarily the Beatific Vision, there is this *sequela*: the complete assurance that all will be well with us. And should one persist in demanding, how *could* things be well with us without the Beatific Vision of God, or, how could things be well with us with *only* the increasing clarity of our present vision? I see no answer to such questions. And, I add, I see no practical need for an answer. Even assuming that we knew the answer, would the answer commit us to God? It would not. Our need is to commit ourselves, for this is salvation; this is to have an infinite Friend; this is the good for man so far forth as man has anything to do with the matter. Should there *be* more to the matter, should our need for God be vaster than we could ever dream, vaster than any resource within us could ever compass, what of it? What one cannot accomplish of oneself one can accomplish through one's Friend.[29] Seen from

[29] *Sum. Theol.*, I-II, 5, 5, obj. 1 et ad 1: ...sicut natura non deficit homini in necessariis, quamvis non dederit sibi arma et tegumenta sicut aliis animalibus, quia dedit ei rationem et manus, quibus possit haec sibi acquirere; ita nec deficit homini in necessariis, quamvis non daret sibi aliquod principium quo posset beatitudinem consequi; hoc enim erat impossibile. Sed dedit ei liberum arbitrium, quo possit converti ad Deum, qui eum faceret beatum. 'Quae enim per amicos possumus, per nos aliqualiter possumus,'...

the resources of reason alone, the unity of man's last end thus seems to lie in his free commitment to whatsoever the Love which made and invites man's love wishes, for only in this commitment is man's free nature completed. We may not know what that completion is to be, but we know it will be our completion.

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COMMENT ON FATHER GERARD SMITH'S PAPER

THE profound and provocative paper we have just heard presents in a new and rich and lucid perspective the mystery that is the ultimate end of man. The intellectual structure that is man's can be achieved only in terms of the true which the will pursues under the name of the good; neither the good nor the true, which are different faces of being, can be sought or found except by their references to *Ipsum Esse*. To seek as good the completion of our intellectual structure which is the true is not a matter of man's own devising. It is a necessity in the nature of our intellectual structure itself without which man could neither be nor be understood.

Yet to be committed to this instance of the good, even if the instance be God Himself, is not compulsory but free. And our freedom involves the quest for our total good in particulars, the identification of the infinite good, our total good, with some one or other of finite goods. Such a unity of the infinite and finite can be achieved only by a love act, a free commitment which cannot be wrong because the error would be a willed mistake and hence a contradiction. In this manner, God is had here and now by our free commitment to a particular good, and there is a friendship leading to the consummation of love in the Beatific Vision.

Such, as I see it, is the burden of Father Smith's remarkable paper, and though one of the rules for commentators at these meetings is to avoid summarizing the papers, I have felt that in view of the dense and difficult metaphysical thicket we have

entered this morning, some attempt at summary would be the best service I could provide for those hearing Father Smith's tenuous arguments for the first time. If I understand these arguments from having studied them at close range, they are not pitched in any direct dependence on man's ultimate end. Father Smith writes of "the practical situation," the actual historical exercise of the love act without those finer distinctions between nature and grace and between the natural and supernatural destiny of man. We may, according to Father Smith's concluding remarks, never know precisely what our ultimate end is; it is enough that it be our end and that we know it to be our completion, as we turn to God and trust in the infinite resources of His Friendship.

Father Smith, though instructing us on numerous metaphysical issues, has left the definition of man's ultimate end to torture us still, and if the questions raised were pushed far enough, this larger and highly debated problem would return to our wonder and our worry, as we analyze how the identification of our total good and a particular finite good is possible in the metaphysical order and efficacious in the moral order. Father Smith does not wish to re-open this question here, and neither do I. I am only interpreting his paper and circumscribing the discussion that is to follow. That the problem of man's end has been stated in a way that is neutral to what that end may be is an achievement made here this morning for which all of us here present should be grateful.

VINCENT E. SMITH

University of Notre Dame

ROUND TABLE DISCUSSIONS

LOGIC AND METHOD DIVISION: JAMES LINEHAN, *Chairman.*

The Concept of the Genus and the Generic Concept

Our problem in this paper is to endeavor to understand better the broad and basic concept of genus which forms a part of the complex concept of species. Both in logic and philosophy of nature species is the definitive concept upon which so much thinking and predicating depends. We shall then, be obliged to treat of the logical, that is second intentional beings of genus, species and difference, as well as the ontological, generic and specific concepts of things existing in the order of reality. Hence, we shall first study the meaning of the concept of genus, i.e., of the logical order; and secondly, the generic concept, i.e. objective concepts of real beings of both the substantial and accidental orders. As we progress it should be recognized that our generic concepts are a powerful aid to a broad and firm kind of basic knowledge. For at very deep levels all knowledge seems to have connecting channels. It should also be recognized that a kind of suppleness and expansiveness not possible to the precise concept of the essence, set forth in the specific definition, lies in the larger consideration of the genera as we proceed out to the most remote one.

St. Thomas tells us in the *De Ente Et Essentia*[1] that predicability of many belongs essentially to the five logical predicables, genus, specific difference, species, property, and accident. And genus, species and difference may all be predicated universally of the same thing though obviously in somewhat different ways. "Genus, then signifies indeterminately every thing in the species. It does not indicate matter alone. Similarly, the difference also signifies the whole and does not indicate merely the form. ...But the definition or species embraces both, namely, the determinate matter expressed by the word genus, and the determinate form expressed by the word difference."[2] Now St. Thomas is careful to state here that he is treating of logical beings, terms and concepts of second intention, employed in constructing the concept of species or essential definition. He asserts that we may speak of man being made up of soul and body as a third thing resulting from the two things or principles which constitute it. But if we say that man is made up of animal and rational, "it will not be as a third thing is made up of two things but as a third concept of two concepts....And from these two concepts is formed the concept of the species or definition."[3] Thus each of the two parts, genus and difference, must express some special aspect of the whole signification borne by the specific definition which according to Aristotle is the complex concept expressing the essence of a thing. St. Thomas affirms that the logical genus, differ-

[1] *On Being And Essence*, Ch. II, p. 35, Maurer trans. Pontifical Inst. Ed. Toronto, Can.

[2] *Ibid., loc. cit.*

[3] *Ibid.*, p. 36.

ence, and species are proportionately related matter, form and the composite.[4] And again he says that genus and difference resemble a subject and its accidents. But he in no sense claims that these two logical concepts are identifiable with the real principles or beings. In the *De Ente* we read, "The genus is not matter, but is taken from matter. It is a *name* signifying what is material in the thing without including the proper formal determination. It expresses something about the nature on the basis of *all* that is *material* with respect to the ultimate perfections."

It is by an act of total abstraction which cuts off sharply and separates logically whole concepts, that the mind works with the concepts of genus and difference. The intellect thus holds such broad, indeterminate, even imperfect concepts as substance, corporeality, organized structure, and animal in readiness to be formally and specifically determined. Now this requires the addition of the concept of some specifying form, i.e. something formal and qualitative will have to be joined to the material, potential, and indetermined part if the definition is to be completely intelligible. This new element, the difference, is taken from the form but does not identify with the substantial form. And by itself it does not include the notion of determinate matter within it. Genus and differentia are two logically whole, independent, and separable concepts which can be predicated to signify the whole species; in the case of the first, potentially and in the case of the second, determinately. The characteristics of wholeness, independence, and universality of these concepts are notes enjoyed by these logical entities but not by the principles of matter and form in the order of reality. But it must be understood that the science of logic (distinguished from the art) strictly speaking, begins where the beings of second intention enjoy properties not possessed outside of this order. Thus the strictly logical being as these concepts are, together with their own properties, belong in the world of thought,—the intra-mental order. Yet they are so much apparatus which must be used to define the essences of real things. Now since the whole burden of describing and defining is to understand and express reality more adequately, these logical concepts must and do relate to the real order of existing things. This will become more clear in the second part of this paper. But in the science of defining we must see these parts of the specific definition in a kind of dual service: (1) as instruments of ordering or relating and (2) as second intentional concepts with a function of representing. The position of genus and difference as instruments of orderly defining, i.e. clear cut parts of the complex definition is easy to see. Their secondary representative function is not so easily grasped. It seems best to describe it by the very words used by St. Thomas and Aristotle, viz. "taken from", "standing for" and "signifying" matter and form. Now if we look at matter and form, the real principles of natural essences, which genus and difference are said to signify and to be comparable with, we find that genus resembles prime matter in a way. On the other hand, this same concept is said to be regarded something as a substantive and as having its own formal element. St. Thomas affirms (*De Ente*)[5] that

[4] *Ibid.*, p. 35.

[5] *Ibid., loc. cit.*

the unity of the genus is maintained by its very indeterminateness and indifference, something as prime matter may be said to be one because of the removal of all forms. In relation to the several species potentially contained in it, the genus without the specifying difference is as undetermined as any uninformed matter. Looking at the genus again in its wholeness and independence as we admit it to be a universal predicable we see it signifying something more determinate and perfect than purely unspecified matter. For genera such as animal, organism, and body, signify certain forms of perfection which in logic are called "formalities". These are not to be equated with the concepts of substantial forms. But they are concepts expressing some forms of actuality. In the *De Ente*,[6] St. Thomas states that the genera express some form of actuality but not as determined and complete. That is, "animal" signifies a sensitive form and it also potentially implies such perfections as its inferior species contain. And this must be the reason why St. Thomas claims that it expresses something about the nature "on the basis of all that is material with respect to the ultimate perfections."[7]

In the addition of the differentia which is imposed as a specifying act upon the genus we see the latter as in total potentiality to something more actual but not in total potency, i.e. indeterminate and imperfect. In this logical process John of St. Thomas asserts that we may consider the genus "after the manner of a substance and difference after the manner of the accident, quality," since it is only to a substance that an intrinsic qualitative accident can be added.[8] After the determined species has been arrived at the genus seems now to be contained in the species rather than the species in the genus. And that is precisely what has occurred. Within the complex concept of species are to be found the notion of those formal perfections expressed by the specifying qualitative form, e.g. rationality in man, as well as those perfections expressed by the formality of the proximate genus, animal in man. Since the proximate genus contains virtually all that is found in the remote genera, animality includes those perfections belonging essentially to living, bodily, substances. The need for the apparatus of genus and difference seems to disappear in the unity of the new concept, species. Yet, as in the case of the formally abstracted universal we return to the phantasm to identify singulars and to reflect on their concrete accidents, so in the logical order we seem to need to refer directly back to the genus and difference for a better understanding of the complex specific definition which defines a unified essence.

We must now endeavor to see what is meant by the generic concept which we constantly make use of in all of our scientific thinking especially in the realm of philosophy. May we ever maintain that there is a strictly generic nature, i.e. in the sense of ontologically existing as such? We may not if we mean that there exist generic natures completely determined and terminated as such. For this would amount to saying that the doctrine of species doesn't apply to all creatures, which is untenable. St. Thomas

[6] *Ibid.*, p. 36.

[7] *Ibid.*, p. 36.

[8] John of St. Thomas, *Cursus Philosophicus*, Ars Logica, II, q. 7, a. 3.

affirms that "the ultimate intention of nature is to species and not to genus or to individual."[9] And in the *De Ente* he explains that nature as it exists in the individual does not have the character of either genus or species (i.e. universal logical concepts). "Human nature," he says, "can have the character of 'species' only as it exists in the intellect in abstraction from all individual conditions, having a uniform relation to all individual men outside of the intellect; being equally the likeness of all and leading to a knowledge of all. . . . And from the fact that the *nature* has such a relation to all individual men, the intellect forms the notion of *species* and attributes it to the *nature*."[10] Thus the tie-up between logic and philosophy of nature is between the logical species and the concept of nature, i.e. the objective concept in which the mind grasps that which universally and essentially constitutes the ontological nature. And in logic we have seen that species itself is defined as the complex concept which defines the essence of a thing. That which is understood then in the term *nature* here, as abstracted from all individuals, having a uniform relation to all individuals, being a likeness of all of them, and leading to a knowledge of all individuals is also referred to as the universal essence. This essence or quiddity of the matter-form things in the universe is the proper object of man's intellect and the term of an act of physical abstraction. Yet we must understand that knowing the quiddity or simply what makes the thing to be what it is, is not to have a complete or exhaustive concept of it. Arriving at a thorough knowledge of the total natures of the creatures in the universe is a long and complex process. They are laboriously disclosed to us from the outside. We start as it were, at the outer edge of a circle of observable accidents and progress through a process of connaturalizing physical phenomena with immaterial faculties, this taking place in the external and internal senses. Both the proper and common objects of the senses are readily apprehended and motion seems to be one of those common sensibles almost constantly stimulating the senses. In the animate creatures the more interiorized accidents of powers depend upon heir very operations, movements of some kind, to make them manifest externally. And it is through their operations that the most interior and intrinsic accidents of quality are disclosed to us. These St. Thomas significantly calls "signs" of the essence of a thing. The very specifying qualities by which we recognize things as belonging to the same natural classes of things, whether they be called phyla or families or sub-species by natural scientists, are recognized in this way. Observing the effects of powers in operation takes place before the apprehension of the essence or nature of a thing. (The principle—A being acts as it is, or actions follow being, is certainly applied inductively as often as it is deductively.) And yet this is not to say that the universal concept which is understood by a spiritual power in a spiritual manner is attained in the act of abstraction through a kind of part by part concretion. The intellect, transcending all individualizing accidents, ultimately arrives at the formal concept of the essence or nature. At the same time, by an act of formal abstraction

[9] *Summa Theologica*, I, Q. 85, a. 3, ad. 4.

[10] *On Being and Essence*, Ch. III, p. 41.

on the physical or matter-form level the intellect retains within the concept, common matter. The true nature of corporeal substances could not be known otherwise. The very fact that St. Thomas affirms a number of times that the human intellect knows thru analysis and synthesis, knows even simple things somehow complexly,[11] and has an affinity for compound and temporal things,[12] indicates that he stressed the synthetic character of conceptual knowledge. (It is significant too that our knowledge of the dynamic, moving, living natures is expressed only in verbs of motion which consignify time. No strictly single concepts seem to contain these notions.)

Now, in the universal concept of the matter-form being, man, if we may be permitted to logically or virtually separate the common matter, something after the manner in which we separate the formality of the genera by an act of total abstraction, we shall discover something like all of the genera, proximate and remote, enveloping the intelligible form. The latter is of course truly disclosed by an act of formal abstraction. That is, it is disengaged from the single, concrete notes of the individual members of this nature or species (individual accidents of one particular man). But the total concept must retain the notion of common matter required in the substance of man. This includes a three dimensional, organized, living, sentient body apt for a rational soul. This is the signate matter convenient to such a specific form. The several logical concepts of formalities or separate genera seem now to be united in the common matter of the formal concept of the essence. In logic we have seen that the genus represents something as taken *from* the matter of a thing and expressing something about the *nature* on the basis of all that is material with respect to ultimate perfections. And these ultimate perfections certainly are none other than the intrinsically specific material ones.

Hence, we should be able to see now why the concept of genus may not be predicated identically of several species *in esse*, i.e. as existent natures. But considered *secundum intentionem* i.e. the *ratio* of the genus or the logical concept of a formality such as animal or living body, since it retains its own broad unity and univocal meaning, may be predicated of its several species. It is thus attributed to the several logical species as potentially contained within it. And this is based according to St. Thomas on "all that is material with respect to the ultimate perfections" in the species. Obviously, these when specified are unequal and different. The inequality among species within the same genus has been called by St. Thomas "analogia secundum esse at non secundum intentionem."[13] Cajetan's term for it is analogy of inequality.[14] They both hold that the logical concept or *ratio* of the genus maintains a unity which prevents it from being a strictly analogous concept. But the actual specific natures which participate in a common genus do so in such different ways that St. Thomas and some of the commentators on his works consider these

[11] *Summa Theol.*, II-II, a. 1, q. 2, c.

[12] *Ibid., loc. cit.*

[13] *De Veritate*, q. 2, a. 11.

[14] Cajetan, Thos. De Vio, *De Nominum Analogia*, Ch. 1, p. 6.

natures analogous, *in esse*. Abbè Penido makes use of the term "loose univocity" in describing the concept itself, i.e. of the generic formality or perfection which retains true univocity but involves a difference among species. Here he grants a diversity of more or less in the "intensity" of the generic perfection.[15] Hence, Penido claims that a sort of pseudo-analogy is employed by natural scientists who compare series of animals or plants which have an imperfect objective similitude but whose generic *ratio* remains the same. The difference in the objective natures accounts for the difference *quo ad esse*, and the generic unity accounts for the univocity *secundum intentionem*.

Now it must be evident to us that in the real existing natures there are not strictly "generic" constitutive parts as such. Does it then seem legitimate to speak of a "generic" concept? Again we must recall that our universal concepts of essences or natures though simple and immaterial, have been drawn from and represent beings which are complex compositions, both physically and metaphysically. That which an act of formal abstraction on the metaphysical level attains regarding such a nature (defined by the logical species) is a substance with its many accidents or perfections. Some of the accidents modify the form, some the matter, and others the composite. But the matter-form being is so thoroughly unified as a substance that not even those accidents which are always predicated of the material part can be completely separated from the form. For the matter is in act only through the substantial form.

It is at this point that the philosopher recognizes more than ever the value of the powerful distinction between the substance and accidents in every creature, and the great service rendered to both metaphysics and logic by the Aristotelian categories of being. These are those who believe that Aristotle approached his doctrine of categories from a purely logical point of view, i.e. simply as a problem of logical predication. This may be due to the fact that the first treatment of them appears in the *Organon*. Others believe that Aristotle arrived at this very general classification of things purely through experience and observation of concrete things. Such an idea smacks of nominalism and empiricism. Ross believes that Aristotle arrived at the categories "by simple inspection of reality aided by a study of verbal distinctions."[16] This seems the most plausible. In the *Organon*[17] Aristotle definitely refers to the categories as the ten broadest predicates, and in the *De Anima*[18] as summa genera. But there are numerous other references to them as kinds of beings and classes of things.

That the categories are instruments used to order and arrange real beings into general ontological classes seems quite undeniable. For we

[15] Penido, Abbe, *Le role de analogie in theologie dogmatique*, Bibliotheque Thomiste, vol. xv, p. 20.

[16] Ross, W. D., *Aristotles Metaphysics*, I, p. LXXXV.

[17] *Categories*, I, b 25 and *Topics*, 103, b 23.

[18] *De Anima*, 402, a 22.

read in the *Metaphysics*,[19] "The kinds of essential beings are precisely those that are indicated by the figures of predication," and, "things which belong to different categories of being are in other genus and things in the same line of predication are in the same genus." He states also that it is necessary to determine in which of the summa genera the soul lies, what it is.[20] Again in the *Organon* he asserts, "All such predicates (adjectival) are coincidents and are predicated of substance. . . . Every predication displays the subject as somehow qualified, or quantified, or as characterized under one of the other adjectival categories . . . for every predication exhibits the subject as somehow qualified or quantified, essentially related, acting or suffering, or in some place or at some time."[21] Thus we see that the categories of Aristotle are not species of being, for being can't be reduced to a genus. Nor are they merely ten predicaments for logical purpose, but a realistic supreme classification of existing things. They express in the most general terms the primary way in which natures exist (substance) and the nine secondary ways in which the attributes of natural substances exist in modifying and perfecting the substance in which they are found.

That St. Thomas also treats the categories in a philosophical and real sense as well as in a logical sense is evident in the *De Ente Et Essentia, De Potentia Dei, Comment on the Metaphysics*, and throughout the *Summa Theologica*. In keeping with his philosophy of moderate realism St. Thomas uses the concepts of accidents in both generic and specific ways to refer to real quantity, quality, relations, etc. existing in real substances. He has succinctly described the relationship of a substance to is accidents in three ways: first, as affording them support; second, as being in potency to further actuation or perfection by the accident; and thirdly, the substance is said to be to its accidents as a cause to its effects.[22] (Principle of subject is a principle per se of its accidents.) That we may not seem to confuse the logical accident with the ontological in the writings of St. Thomas, we must mention that he follows the system of Aristotle That is, the metaphysical or ontological accident is a real entity with secondary form and secondary being inhering in some substance. While the logical accident is the relation that a universal term as a predicate bears to the subject of a proposition, indicating something that is not necessarily but only contingently related to the essence of the subject. (The genus and difference indicate necessary relation.) Accordingly, the logical accident is not immediately opposed to substance but to another class of accidents higher and more necessary, viz. properties. The meta-

[19] *Metaphysics*, 1017, a 24-28 and *De Anima*, 410, a 12-14.

[20] *De Anima*, 402, a 22.

[21] *Analytica Post*, 83 b, 11-16.

[22] *De Virtutibus in Commune*, a 3. "Subjectum tripliciter comparatur ad accidens. Uno modo sicut praebens ei sustentamentum: nam accidens per se non subsistit, fulcitur vero per subjectum. Alio modo sicut potentia ad actum: nam subjectum accidenti subjicitur, sicut quaedam potentia actui; unde et accidens forma dicitur. Tertio modo sicut causa ad effectum: nam principia subjecti sunt principia per se accidens."

physical accident is contrasted immediately with substance and includes the nine non-substantial categories of reality.[23]

Now it might seem that the triple description of the substance-accident relationship given by St. Thomas should clarify this question sufficiently as not to require logical or essential definitions of accidents as such. But St. Thomas takes us right into the classifying and defining of accidents with as much clarity as he does that of substantial natures, defined by essence in the logical species. Furthermore, Aquinas actually gives two ways of defining accidents, viz., in the abstract and in the concrete.[24] It will be noted that in neither case can the accident be defined without including its subject of inherence as part of the definition, St. Thomas affirms, "Accordingly, in defining an accident in the abstract we do not put the subject as though it were the first part of the definition viz. genus, but we give it the second place, that of difference. . . . But if one take accident in the concrete the relation begins in the subject and terminates at the accident. Accordingly, in defining this kind of accident, we place the subject as the genus which is the first part of the definition."[25] And he gives as an example the well known Aristotelian definition of "snubnosedness" or *simitas*, as curvature of the nose. Thus, the genus here is the principle affecting the modification, the qualitative accident of curved figure. And the subject receiving the modification is the differentia, that is, nose. This then is one species of curved things. Another example given by St. Thomas[26] is "Whiteness is that whereby a thing is white." (as paper, snow or milk.) The principle affecting the modification, the accident of color whiteness, is taken as genus and the concrete subject, paper etc. is the differentia. And a species of white things is the result. But in the concrete case the procedure is just the opposite. For he states, "A snub-nose (*simum*) is a curved nose." Here, the accident of curved figure differentiates nose, taken as the genus, and the species is one type of nose. Similarly a white thing is something that is white, not blue or green. Thus, this is one species of colored things among variously colored objects.

In the realm of higher accidents such as the powers, acts, and habits of the human soul St. Thomas again employs generic and specific classifications and definitions. Thus, knowledge is a proximate genus and under it are the species sensible, intellectual, and revealed knowledge. In commenting on the duration of faith and whether it will exist in the next life, St. Thomas asserts that the "generic quality of faith i.e. cognition will remain but not the specific quality."[27] This latter, accepting the truth of knowledge *as* revealed is no longer needed in heaven. St. Thomas defines the moral quality of justice as the virtue which inclines the will to constantly render that which is due to another.[28] And the just man he defines as

[23] *Cursus Philosophicus*, Ars Logica, II, q. 12, a. 1.

[24] *On Being and Essence*, Ch. VI, pp. 58-59.

[25] *Ibid.*, p. 58 also *De Veritate* q. 3, a. 7, ad. 2.

[26] I-II, q. 53, a. 2, ad. 3.

[27] I-II, q. 67, a. 5.

[28] II-II, q. 58, a. 1.

one who gives what is due to everyone, man, society, and God. Hence while the concrete definition gives us knowledge of a single substance as existing with its accidental perfections, we must still have the abstract definition against which to measure concrete perfections. In treating the question of the sense appetites St. Thomas designates he sensual appetite as one generic power with two species, irascible and concupiscible appetites. These latter are specified by their acts as directed to objects.[29] Preceding this description of a generic power the author distinguishes five genera of powers in the soul of man, three knowing and two tending. And he goes on to show that the knowing powers are distinguished generically according to the universality of their objects, the lower powers directed to more concrete, physical things but intellect to the immaterial and universal. The two tending powers, appetite and locomotion, are distinguished according to an extrinsic object in as much as the soul tends towards it, first as an end and secondly as a term of operation in realizing its intentions and desires.[30]

It appears to us now that in order to know concrete substances better we must do so by studying the subject, treated as a kind of genus, as determined i.e. measured, disposed in various ways, related to many other things, acting, receiving, etc. The subject or genus we see determined and differentiated by some accidental forms to the extent that the substance is capable of being modified. Concerning this point St. Thomas affirms, "Whatever is befitting an accident on the part of the subject but is not of the very *essence* of the accident is ascribed to that accident not in the abstract but in the concrete; such are increase and decrease in cerain accidents. Wherefore to be more or less white is not ascribed to whiteness but to the white thing. The same applies to habits and some other qualities." [31] As another example he gives heat as varying according to the bodies receiving it. On the other hand, in order to know more about the accidents themselves i.e. essentially as perfections distinguished from the modified subject, we must advert to their abstract definitions. St. Thomas has shown that even in the case of quantity the concrete consideration is not adequate. And in defining quantity he has added something very significant to the traditional Aristotelian definition of quantity as found in concrete things (ens in quantum). It is true that St. Thomas with Aristotle affirms that quantity is the first and immediate accident of physical substances [32] and consequent on the matter. And in the third part of the *Summa*, St. Thomas adds that the first disposition of matter is dimensive quantity.[33] In consequence of this, he asserts that all other

[29] I. q. 81, a. 1 and 2.

[30] I, q. 78, a. 1.

[31] I-II, Q. 53, a. 2, ad. 3.

[32] Comment. In Met., V, 15, 983.

[33] Summa Th. III, q. 77, a. 2. "Prima dispositio materiae est quantitas dimensiva.... Quia primum subjectum est materia, consequens est quod omnia alia accidentia referantur ad subjectum mediante quantitate dimensiva; sicut et primum subjectum coloris dicitur esse superficies."

accidents in material substances are related to their subject through the medium of dimensive quantity; just as the first subject of color is said to be the surface. Thus, he ascribes to quantity a double role, determining a substance to have parts and measuring it and also serving as an immediate medium for some of the other accidents. But Aquinas strictly distinguishes quantity from the essence of the material substance[34] remarking that the latter is indifferent to greater or less extension and contained in large or small quantities. As a medium for qualities it would follow that it is not metaphysically impossible for quantity to remain in existence should it be separated from substance (e.g. as occurs in the Holy Eucharist.)

It seems that accidents by their very nature are some best and clearest examples of true objective generic concepts. And it must be that their secondary forms, natures, and modes of existence are responsible for this. For since they are not composed of matter and form we cannot take their genera from matter or their differences from form. Abstractly defining we simply take their genus from their very manner of existing, that is, as modifying some substance, the subject itself constituting the difference. Here then, is a genus which represents directly a real thing, viz. the actual mode of existence of attributes in real substances. Whereas we found in the order of substances no objectively existing counterpart for the "genus". The logical genus and difference as parts of the concept of species or definition refer mediately to the universal objective concept of natural substance. And they are described as taken from and standing for the matter and form but not equivalent to them. It appears that the most realistic or actual "generic place" that any substance can hold is as subject of its own accidents. Here it is as the determinable principle to the determining modifications and likewise the accident is the actual differentia. In short, this is what we express in the concrete definitions of accidents. When we are inductively and experimentally studying the substance with all of its perfecting accidents, which is the whole physical nature of the thing, we see the substance related to its accidents much as we saw the formality related to the specifying difference in logically defining essences of natural species. In abstractly considering the whole substantial nature we see accidents as absolutely dependent upon and undefinable without the inclusion of their subject as difference. Thus, considered strictly or radically these secondary forms with secondary existence are made to be what they are by the primary form and existence of their subject. However, since they are both required reciprocally for the existence and operation of individual natures we must see the accidents as instruments of perfection through which the substantial nature manifests and diffuses itself concretely. St. Thomas asserts that no accident can be considered as completely separable from the form—not even those that actually belong to the material part of a thing. For he holds that since matter is made actual only through the substantial form there is nothing in the whole nature that is independen of the form.[35]

[34] De Potentia, Q. 7, a. 8, ad. 3 and S. T. III, 76, 1, ad. 3.

[35] *On Being and Essence*, ch. 6, p. 57.

Thus St. Thomas has shown us that accidents though they have only secondary forms and existence are formally understandable, definable, and predicable both abstractly and concretely as well as generically and specifically of the multitudes of attributes found in substances. The latter are both logically and really distinct from their accidents. They are properly specified and defined as essences and as such are true objects of science. Now holding the substance in the position of genus as determinable by its accidents is not for the sake of scientific study of substance per se, as such. But since we must make use of the logical method to help us understand and define accidents we must start with the subject which is ultimately perfected by these accidents, as the potential and determinable element. Science proceeds *ex proprius*, with its specific definitions and proper causes only after it has been preceded by the pre-scientific work of observation, comparison, classification, defining etc. Our whole system of sciences leans heavily upon the dialectical method which proceeds *ex communis*, as contrasted with the proper or specific procedure. Man is more a knowledge "getter" when he is gathering data for definitions and reasoning discursively. And he is more a possessor of truth and in a position to contemplate truth, in knowing what things *are* through definitions and proper conclusions about their natures and operations.

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Nature: Deterministic or Indeterministic?

I

The Issue

The outstanding characteristic of the physical science of the universe since the turn of the century is its concentration upon the distant and the minute; and even the vast remote nebulae are understood in terms of the tiny particles of matter. The triumph of atomistics is complete, and the landmarks of its progress are known to all. Until 1900, physical research was primarily concerned with the laws and theories governing gross matter. Newton's concepts of space and time, and the general laws of classical mechanics seemed to answer all the problems raised.

Theoretical physics then rested upon two foundations: the mechanical view of the material world, and the theory of the continuity of physical phenomena, which allowed mathematical formulation with the valuable assistance of infinitesimal analysis. The first foundation was incorporated in Galileo's notion of inertia and elaborated with great precision in Newton's definitions, axioms and laws.[1] The second foundation was an

[1] Cf. I. Newton, *Principia* (Berkeley, California: University of California Press, 1947), pp. 1-29.

application of Leibniz's formula: "Natura non facit saltus," and provided a natural basis for the extrapolation necessary for perfect mathematical formulation of the mechanical theory.

The success of these two concepts in astronomy, mechanics and physics is well known, and little by little there evolved a neat picture of the principles of nature and the principles of the science of nature in perfect functional coordination. In the words of de Broglie:

> They imagined (the physical Universe) to be like a gigantic machine which, as Descartes had put it, could be described by means of Form and Motion, i.e. as a machine consisting of parts in spatial juxtaposition which could move in Time, while their motion and the changes they underwent were essentially continuous and resulted from their mutual actions and reactions, so that they could be exactly expressed in the precise terms of mathematical analysis. As the interactions between the different parts of the material Universe diminish with distance, it is often possible to carve out independent or practically independent systems; and in such a case the Laws both of Mechanics and of Physics said that an adequate knowledge of the initial state of such an isolated system could predict exactly, given the help of analysis, the entire future hsitory of the system.[2]

The two basic tenets of classical mechanics converge to form the celebrated Principle of Determinism, or the classical causal doctrine which may be expressed in the statement: "the evolution of any self-contained, or isolated, system is determined by the initial state of the system." This definition of cause is a highly restricted application of cause-effect, just as Newton's definition of motion was highly restricted, and means simply that if the state of a closed system at an instant is completely known, then the state of the system in every earlier and later instant can be completely calculated. By a generous extrapolation, (which, because they believed the two foundation stones were firmly set in Nature, was verifyable *in principle* if not in fact), the classical physicists were confident that they had once and for all constructed an indestructable framework for their science of Nature. Nature was strictly determined down to the individual behavior of each particle; the principles of their science of Nature were strictly determined by definition and application. An omniscient investigator, like Laplace's daemon, could have a perfect science of prediction of all of Nature's behavior.[3]

But the triumph of atomic physics was to destroy this confidence in Laplace's daemon and seriously threaten the very foundations of natural science. The brilliant achievements in atomic experiments made by Thomson, Roentgen, Becquerel, the Curies, Rutherford and Einstein—to mention but a few—are now known to every schoolboy. But it was the work of Rutherford and Soddy on the process of radioactive disintegration which gave rise to serious theoretical difficulties. This disintegration, they found, consisted in a series of transformations of one atom into another. By accurate measurement of the scattering of alpha rays by atoms, convincing persuasions were given for the planitary model of the atom, and

[2] Louis de Broglie, *Matter and Light* (New York: Dover, 1939), p. 248.

[3] *Ibid.*, 241.

finally they were able to determine the nuclear charge that attracts the electrons and keeps them in their orbit.[4]

The difficulties, however, were these: (1) It was impossible to explain the perfect stability of atoms by a Newtonian model; and (2) Newtonian laws could not account for the random character of radio-active decay. As we saw, classical mechanics presupposes every event to be strictly determined, and every cause determinable. Yet in the case of radioactive disintegration of atoms, though the average rate of great numbers can be determined, it is not possible to predict the moment when any given atom (say of radium) will disintegrate. It might seem, at first glance, that additional information about the individual atoms might fill in the gap, and strict determinism be saved, but such was not to be the case.

Max Planck showed that the observed spectrum of black-body radiation could not be accounted for by classical theory and solved the above difficulty on the assumption that radiant energy is emitted in finite quanta, not continuously; and this quantum, which is proportional to the frequency of radiation, he calculated to be a fixed number which came to be known as Planck's constant h.

The effective application of Planck's quantum gave rise to a further dilemma, the reconciliation of this corpuscular concept with the prevailing wave theory of light which was well established by many experiments. Nonetheless, Einstein demonstrated that Planck's quantum could explain the photoelectric effect and thermal properties of molecules and crystals, and in 1913, Bohr applied the quantum hypothesis successfully to Rutherford's model of the atom. There followed one victory after another for the quantum theory, especially in accounting for atomic stability. Bohr's predictions, deduced from the theory, were verified by experiments, and the quantum view was extended by Sommerfeld and others in many directions.

One of the most important of these extensions was the discovery of the "exclusion principle" by Pauli in 1925, a principle which was found to govern the electrons in a most singular manner—as we shall see.[5] So fruitful was this principle that Bohr was enabled to complete his interpretation of the periodic system of elements in terms of electronic orbits, and through this a new element, *hafnium*, was discovered. The accumulating list of remarkable successes in predicting behavior on the atomic level, together with the Compton experiments on the scattering of light by electrons, seemed to give conclusive proof of the existence of light quanta or *photons*.

Now experiments had shown that, to a degree, both the wave and corpuscular account of light are correct, and Planck's formula (the quantum of energy equals Planck's constant times the frequency) in reality states the relation between these seemingly contradictory concepts. de Broglie, applying relativity principles, showed how the behavior of electrons as waves and particles was possible. And finally, logically

[4] Cf. Max Born, "Physics", *Scientific American*, Sept. 1950, pp. 29-30.

[5] Cf. Henry Margenau, *The Nature of Physical Reality* (New York: McGraw-Hill, 1950), pp. 427 ff.

consistent theories which would account for this wave-particle phenomena were stated. The different forms of this theory are: *quantum mechanics,* stated by Heisenberg, Born and Jordan; *wave mechanics,* stated by Schrodinger; and *symbolic mechanics,* stated by Dirac.[6]

The new theory was revolutionary in comparison to the classical view, for whereas the old theory was *deterministic in principle,* the new theory was to be defined as *indeterministic in principle.* True, the new mechanics was to include classical mechanics as a limiting case and preserved much of its structure, but its regard for fundamental determinism was one of progressive scepticism. A few held out for the possibility of reinstating the former view, such as Einstein and Planck, but for the majority of quantum physicists, determinism was dead. The death blow came with the formulation of Heisenberg's Uncertainty Relations which connote the impossibility of obtaining a simultaneous knowledge of the space-time position of a particle and of its momentum and energy.[7]

The old view held that position and momentum of a particle determine its state, and the initial state of the particle must be known in order to determine its future state. Here was a principle, established on secure experimental basis, and deducible from quantum theory, which showed that on the level where the quantum h is applicable, it is *impossible in principle* to apply the causal laws of classical determinism.

Since the causal laws could not be tested and shown to be operative in the behavior of individual particles, three attitudes were assumed: (1) Rejection of determinism, as did Heisenberg, Born and Dirac; (2) Argue incomplete evidence and wait for the return of determinism, as did Planck and Einstein; (3) Seek a compromise, as did Bohr in his *Principle of Complimentarity* which states: A rigorous space-time description and a rigorous causal sequence for individual processes cannot be realized simultaneously—the one or the other must be sacrificed. The debate goes on, and basically underlies the entire thinking of modern physics, but, in practice, the complimentarity principle is used, supplemented by probability statistics; the latter is used to convert the uncertainty of individual states into equally vague probability patterns so that classical laws migh be applied.[8]

It is difficult to obtain an accurate picture of the setting of the fundamental theoretical issue in Physical Science today in such a cursory review. But this much is evident, the problem which divides the greatest minds in physical science is basic to the entire structure of our present knowledge of the world. Those who see in recent developments the overthrow of determinism are not merely thinking in terms of the vagueness of their science, the incompleteness of operations or the failure of measurements. By far the majority of quantum physicists are convinced that the evidence,

[6] Cf. A. D'Abro, *The New Physics* (New York: Dover, 1951), Vol. II.

[7] *Ibid.*, p. 950.

[8] Cf. N. Bohr, "Discussions With Einstein", *Albert Einstein: Philosopher-Scientist,* ed. P. Schilpp (Evanston, Ill., 1949), pp. 201 ff. also M. Planck, *The Philosophy of Physics* (New York: Norton, 1936).

both inductive from experiments, and deductive from many diverse theoretical sources, reveal that the uncertainties are not due to the incompleteness of quantum mechanics, but *express a fundamental vagueness in Nature.*[9] In other words, not only is it impossible to provide measurements and operations which would reveal causality (in classical sense) in the behavior of individual particles, but also everything points to the fact that on a certain level, individual natural units are not determined (in classical sense).

This last assertion bears the closest attention, for though it closes the door to any hope for the restricted classical determinism on the part of Nature, it does not abandon all hope for other more realistic concepts of causality. What is stated by these men is that *there is no longer reason to hold that either Nature or the science of Nature operates as described by classical mechanics.* The reason is that the foundations, laws, extrapolations and presuppositions necessary for their mathematical formulation can no longer be defended by the arguments given by classical physics.

II

Questions for Contemporary Physicists

We would expect this crisis to call forth the best efforts of the metaphysician and the logician, but the remarkable fact is the great number of physicists who have taken up the issue of this debate. It is as if it were worth while, nay necessary, in the course of physical research and theoretical investigation, to solve the questions which lay at the heart of this dilemma. Perhaps the reason is simply that nothing modern physics has to say about the Universe has any meaning unless it is placed in the context of some unified world view.[10]

There was a day when concern for meaning and intelligibility of the primary concepts of physical science of nature was left to the so-called "metaphysician". The scientists need only consider the problem at hand, and solve it according to the proximate laws and theories which were most proximate to his experimental data. But in that day, the whole body of science was thrown against the background of classical suppositions. The determinism of Galileo and Newton and Descartes was assumed to be methodologically self-evident, a state of mind only gradually acquired by the overthrow of ancient natural science.

But when the foundations of classical mechanics collapsed on the level of atomic research, and it was seen that what science said of refined nature must determine what it was to say about gross nature, it became evident that the physicist needed new principles. And they were principles which only the physicist could find for himself, if indeed they were to be found at all. It was the crisis concerning determinism in nature and natural science which revealed once more to the physicist that he must solve his problem of first principles if his science was to remain a unified body of physical science.

[9] D'Abro, *op. cit.*, p. 957.

[10] Cf. C. F. von Weizsäcker, *The World View of Physics* (Chicago: University Press, 1949), Chapter One.

What, then, are the specific problems underlying the question of determinism in Nature and science which have come to be the object of investigation for the quantum physicist? Can the question: Is nature deterministic or indeterministic? be broken down into sub-issues and clarified, so that in them we can see the structural and functional unity of the science of nature? It is to this task we now turn.

Our question can first be broken down into three main problems: (1) Is the reality of nature determined in its principles? (2) Is our science of nature determined in its principles? (3) Are the principles of nature and the principles of our science of nature realistically correlated? It was because classical physics thought it could answer in the affirmative to all three of these issues that its foundation and structure persisted. Indeed, any realistic physical system must be certain on these points. Unless nature is determined in its principles, it could not be known. Even in the most abstract formalism of the science of nature, it is the regularity of the physical universe and its laws which ultimately test the validity of the theories. Then too, if our science of nature is not determined in principle, it hangs loosely in an incomprehensible array of unintelligible assertions. If, finally, the principles of nature and the principles of our science of nature are not carefully coordinated so that one is a realistic function of the other, scientific theory becomes arbitrary.

Quantum theory has shown no disregard for these three issues, and each one in turn has been seriously questioned. It is because quantum physics desires a unified scientific understanding of nature that it seriously questions classical theory. It must be about nature, hence it must account for electron behavior and radiation; it must be scientific, and hence cannot use an outmoded theory of cause; it must be unified, and thus its theory and body of fact must be coordinates. When quantum physics discovered that level of research where it was by no means evident that science had given correct answers to these three questions, it set its greatest minds in search of those principles which would enable physics to answer in the affirmative with an unshakable intuition.

The progress of this investigation in the past twenty-five years would fill volumes, and a number of recent books on the issue manifest that the problems raised are universal, basic and by no means settled to the satisfaction of all. The specific problems which we shall take time to mention at this point only serve as examples of what theoretical physicists have found to be implied in the question: Is nature Deterministic?

(1) First, there is the question concerning the unity and multiplicity of the universe, both individual and specific. Is fine-grained matter continuous or discontinuous? Do quantum jumps (if there are such)[11] imply basic natural primary units which cannot be further understood by divisibility? The classical view of mass points immersed in a continuous field of force as a mathematical center of infinitely extended phenomena is rejected. What is the meaning of "particle," "wave," "field," and

[11] Cf. E. Schrödinger, "Are There Quantum Jumps?" *The British Journal for the Philosophy of Science*, Vol. III, Nos. 10 and 11, August and November, 1952.

"quantum" which have taken its place? As to specific variety in the universe, the questions are even more intriguing. The quantum view places great emphasis upon the stability of the state of the particles of matter and seeks the principle of unity by which the atoms in this stable state maintain themselves. Weizsäcker observes:

> The concept of "stationary state", to which one is thus led, can no longer be deduced from classical physics. It is a basic concept of the peculiar mechanics of the atom: of quantum theory.[12]

But the atoms in their fundamentally stable state manifest themselves as operatively different in *kind*, as the universal application of the Pauli principle of exclusion seems to prove. The suggestion of fundamental specific diversity of matter is inherent in quantum thought.

(2) Second, quantum physics raises the question whether the classical picture of matter and motion is an adequate description of the building up process of the universe. Mass points and force do not seem sufficient. Stability and fundamental organization seem to call for intrinsic principles of natural bodies which determine them in their behavior. Margenau claims for the Pauli principle the same revolutionary effect on science as the relativity theory for the reason that it accounts for formal unity and not just material juxtaposition. Formulated simply: "No two electrons can be in the same state of motion," this principle accounts for properties of particles which can have no meaning with reference to individual parts but are cooperative phenomena, such as, chemical binding, the cohesion of solids, the properties of crystals, ferromagnetism, electrical conductivity, shell structure of atoms and the main facts of chemical valence. Margenau observes:

> ...The exclusion principle imposes a formal property, antisymmetry, upon the state functions of quantum physics and thereby produces correlations which are tantamount to forces.[13]

(3) Third, quantum physics raises the question whether, if the object studied is not fundamentally a mechanical artifact, is it to be viewed as a natural unit with its own intrinsic determinants. Recalling the attention which quantum physics has drawn to fundamental stability and unity of particles, can we conclude that primary natural units are the principle of their own proper motion and repose? In other words, is nature the subject of this science?

(4) Fourth, what is the function of measurement and observation, mathematical formalism and experiment, subject and object in this new scientific view? Is there a physical view of the universe, a mathematical one, and a mathematico-physical one? How are the views to be coordinated and in what context?[14]

[12] von Weizsäcker, *op. cit.*, p. 44.

[13] Margenau, *op. cit.*, p. 437.

[14] Cf. H. Weyl, *Philosophy of Mathematics and Natural Science* (Princeton: University Press, 1949), pp. 139 ff.

(5) Fifth, quantum physics raises the question whether a new concept of cause is to replace the old determinism. Cause, in the sense of an external force acting on mass points is not applicable in problems of fine-structure matter. If a new concept of cause is to be constructed, it must account for formal unity and stability as well as motion. The most surprising feature of the quantum view is the proposal made by some that the new concept of cause must include finality. Differential equations with time-free coefficients were the hallmarks of classical causality and flowed from determinism. But quantum physics contains laws which are expressed as integral equations and can be regarded as the quantum counterpart to teleology. Max Planck, even to the end of his life, considered the validity of integral principles to be undeniable demonstrations of purpose in the Universe.[15] The use of the concepts "form" and "function" in quantum thought is increasing, and many thinkers see in this new concept of cause true scientific application to living things.[16]

(6) Sixth, has quantum physics demonstrated that chance, contrary to the intuition of the determinists, is a true cause in Nature? The usefulness of statistical probabilities was known to classical mechanics, e.g. (the kinetic theory of gases) but in the new view, probability takes on a new meaning. Because individual particles do not appear to be determined by forces in their behavior, as, for example, in the spontaneous disintegration of radioactive atoms, the thought suggests itself that perhaps Nature is radically subject to chance. On the other hand, could this interpretation be reconciled with the constant organizing tendency and stability of nature? True chance behavior on the microscopic level seems evident; how basic and universal is this cause of behavior? [17]

(7) Seventh, and finally, whence comes the scientific conviction in this discipline which has seriously questioned the validity of the causal determinism of classical physics? From which one or group of the principles mentioned is the quantum physicist to find the counterpart of what the ancients called certitude. From the strict determinism of masses and forces? No, this is rejected. From the new concept of form and finality? Or from patterns of probability resting on universal chance behavior of Nature? This question, of all the issues raised by the determinism-indeterminism crisis, is pehhaps the most crucial and the most baffling.

These are samples of basic problems for foundational research. But they are just the beginning. New concepts of motion, space-time, the finite and the infinite, continuity and divisibility must be elaborated. But for the purposes of our consideration, these basic examples are sufficient.

[15] Margenau, *op. cit.*, p. 424.

[16] Cf. E. Schrödinger, *What is Life?* (New York: Macmillan Co.), 1945.

[17] M. Born, *Natural Philosophy of Cause and Change* (Oxford: Clarendon Press, 1949).

III

Conclusion

In bringing this paper to a close, let us see what is to be learned from the above discussion on the question of determinism. No attempt has been made to solve the question whether Nature is determined or indetermined. It has been our purpose, rather, to see exactly what the question involves and how its solution is dependent upon the first principles of our scientific view of Nature, and whose responsibility it is to solve the dilemma of modern science.

The issue, we have seen, centers about the abandonment of the classical view of causality which took place when quantum physics discovered it inapplicable to individual phenomena on the atomic level. With the passing of classical determinism on this level of experiment, there followed a progressive revision of the principles upon which that view was based. It was found that a solution to the question depended upon the principles of physical science, for only in the light of these principles can the issue be clearly seen. Nature is determinate or indeterminate depending upon the preliminary intuitions basic to the science. These foundations involve a three-fold problem. First, is nature determined in its principles; we saw how this was broken down into the questions of the unity and multiplicity of nature, the specificity of nature, and the material and formal principles of the building up process of nature. The second problem was whether the science of nature was determined in its principles, which involves a consideration of the definition of nature as the subject of physical science. The third generic problem was whether the principles of nature and the principles of the science of nature are functionally coordinated; this discussion considered the relation between the experimental data and the formalism, the causal concept necessary to include all the refinements of the new physics, chance and necessity. The intuitions of physical science concerning these fundamental questions determine the progress of the entire discipline.

It is evident, however, that the quest for new principles upon which quantum physics could be realistically based must be carried on by the physicist himself, for he alone can judge what the first principles and methods of his science must be. His intuitions on the matter of principles are conditioned by the nature of the problems of his science, and although it pertains to the logician to judge concerning general method, and to the metaphysician to defend the principles in the light of wisdom, the physicist alone is in the position to investigate and conceptualise his principles. The determinism-indeterminism crisis has brought this fact plainly to light, that the principles of the science of nature must be had by the physicist in order to make intelligible the whole body of his conclusions.

We might make a final observation on the importance of this issue to our own conference on philosophy and unity. The questions raised above concerning the principles of the science of nature have been, in the past, looked upon as philosophical in distinction to the scientific aspect of

particular research. Yet we find the greatest minds among the physicists themselves taking up these questions as essential to the understanding of their science, nay, the most basic of all their scientific questions. Has not this crisis shown that the principles of natural science are so intimately connected with the conclusions that they must be an essential part of the very fabric of the science? This gives us pause to wonder if, in supporting a philosophic aspect of natural science as distinct from the scientific aspect some have not ignored the important fact that scientific theory of every science necessitates union with its principles. Perhaps the most important conclusion we can draw from the debate on determinism is that science is seen only in the light of its principles, and if the foundations are not well laid and in dynamic union with the body of conclusions, the unsupported edifice is destined to collapse.

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COMMENT ON FATHER NOGAR'S PAPER

The question of whether there is determinism or indeterminism in nature —or a mixture of both—is undoubtedly a crucial one in modern physics. As Father Nogar has poined out, the view accepted by the classical physicist favored a materialistic and mechanistic determinism, whereas the atomic or quantum physicist often prefers indeterminism.

The older view readily appeals to the imagination, and can be translated directly into mathematical terms. Nothing is more evident to us than sensory matter and motion, and both can be measured with considerable accuracy. Ordinary experience manifests that bodies can be pushed or pulled around. They can be divided into parts or combined into aggregates of various sizes and shapes. The mechanistic point of view embraces these obvious facts, and seems to provide certain principles in the light of which things can be judged and understood.

Yet this mechanistic point of view is in direct opposition to other equally well known facts, not the least of which are the facts of our own conscious movements and activities. The glaring inconsistency between these facts and the mechanistic theory was softened by various devices and excuses. It was said that physics treats only of objective phenomena, and disregards those of the mind or consciousness, and that physics deals only with the general attributes of matter and motion, without treating of living things as such. But since the discovery of radio-activity and quantum phenomena it has become evident that the mechanistic view is basically untenable. The old mechanism has been abandoned, but it is not so certain what is to be placed in its stead, or whether this is to be determinism or indeterminism.

One thing, however, is clear: the problem of determinism or indeterminism can be settled only on the basis of factual data and certain principles of interpretation. The importance of principles is at least

equal to that of facts. The facts of experience and the knowledge of first principles have been compared to the banks between which the stream of science flows. More exactly we should say that science itself results from the application of the principles to the facts. The facts are given in experience; we can select them and corrlate them but we cannot alter them, certainly not in general. But raw facts are not science. We must judge of the facts by the standard of principles in order to attain science, and from this point of view the principles are more important than the facts—although both are essential. The starting point of understanding is not so much fact as principle.

In order to know where to go for understanding we must know where we are. We must have true, first and immediate principles in order to know where we are, and in order to understand where we are going we must realize that these principles are prior, better known and the causes or essential reasons for certain consequences or effects. We must know where we are in order to proceed with certainty. No certain judgment can be made save by the light of strictly first principles; we cannot decide whether three is greater or less than four without the knowledge of unity. It is because the basic principles of mechanism, matter and motion communicated by extrinsic movers, seemed so evident and certain to many that mechanistic determinism also seemed so certain.

Now we know that the principles of mechanism are not certain, and certainly are not universal. We know that the quantitative division of bodies can proceed indefinitely, and that this process does not lead to a particle which is certainly ultimate and unchangeable. We know also that particles appear to be moved without an apparent extrinsic mover, and the movements which are manifested are by no means always regular. In the data of modern physics it is not easy to recognize any certain first principles. Yet it remains true that only by first principles can we interpret the data, and only by certain principles can we decide whether nature is determined or undetermined.

Some modern physicists assume that there is an objective reality which at least in principle can be measured and known to be regular and determined. Others hold that we know nothing about objective reality itself, but only what is revealed by our measuring instruments. These instruments interact with the reality and change it when they are being applied to measure it. Hence there is a limit to the accuracy of measurements, and even the most accurate reveal not a determined reality but a merely approximate determination of an unknown reality.

These contrasting views agree at least on the importance of principles. The first looks for principles of physical science which will have an objective foundation in physical reality itself. The second is content to base physics on our measurements of things, and admits our necessary ignorance of the reality. Both of these views neglect the primary evidence of things as they are given in ordinary experience. We cannot decide whether nature is determined or indetermined until we know what nature is and discover the principles of natural things and of physical science.

When Aristotle attempted to lay the foundations of physical science, he

faced the problem of finding the first principles of natural things and of discovering how these principles can be employed to develop the science of nature. This he undertook to accomplish in the first two books of the Physics.

In the first book of the Physics Aristotle determines the principles of changing things, and shows that any changing thing—provided that it is one thing capable of change—has in itself two essential principles, a subject of change and a form according to which change takes place, and an incidental principle called privation, which is merely the absence of a certain form or forms in the subject capable of receiving another form.

This analysis is well known, but its true significance is not so well appreciated. It calls our attention, first of all, to the question of unity and multiplicity, and to the diversity between a primary natural unit such as a man or a bird and an aggregate such as a heap of stones. This point is important, because nothing is intelligible to us unless we know that it is one, and know the peculiar unity which it has. Aggregates or mixtures are secondary units composed of many primary units; they vary widely in composition and do not manifest regular or typical properties distinctive of the whole. But the primary natural units: elements, compounds, plants and animals, manifest typical properties, and are of different kinds. These primary units undergo fundamental change: they are generated and corrupted; they come into being and cease to be. This fact of fundamental change manifests that they are composed of a primary subject and a primary form. The primary unit is itself a secondary subject of secondary forms, some of which are regular and typical, whereas others are irregular and accidental.

The primary natural units possess natures of different kinds, and in this respect they are distinct from things which are not natural, which are neither produced by nature nor have a nature, such as things produced by art or by chance. In the second book of the Physics Aristotle determines the proper principles of natural things, and their general causes, and shows how to employ these principles and causes in the development of natural science.

Natural things, such as elements, compounds, plants and animals, differ from things which are not natural by reason of their principles of motion. Artificial things such as tables or chairs do not have in themselves a principle of motion or change, save inasmuch as the materials of which they are made are natural. But a thing which is made by nature and which has a nature has in itself primary principles and causes of its own motion and rest, by which it is moved or moves itself in ways which are typical of its kind. The typical structure, development and functioning of natural things manifest their natures, that is, the principles and causes of their own motion. Each natural thing has in itself a primary and proper subject from which it was generated, as water or salt is generated each from its proper subject. This subject is the material nature or proper matter. Each has also a specific determinant, which is the formal nature or primary form. The primary matter and form peculiar to each type of natural thing and the complete essence constituted by the union

of matter and form are the nature in the natural thing. It is the business of natural science to explain natural things in terms of their natures, that is, in terms of the primary principles and causes of their peculiar behavior. Thus did Aristotle conceive it.

But in order to perfect our science of natural things we must discover not only their natures, that is, their primary and intrinsic principles and causes, but also their other causes, from first to last. Things are as their causes make them, and so in order to understand them we must know their causes. Besides intrinsic causes, both material and formal, natural things also have extrinsic causes. A natural thing is something which is generated and corrupted; it beigns to be and to act, and may cease to be. But it does not make or move itself: whatever is made or moved is actuated by another. Hence an efficient cause is required as the active principle of motion. But an efficient cause acts for a determined end, and so the final cause is also required. This end is something like the agent, often specifically the same, and the agent itself is and acts by reason of its form. Hence in natural processes agent, form and end are alike, sometimes specifically the same, as in the generation of organisms. Yet the agent and the form of the effect are numerically distinct, as are also matter and form numerically distinct principles and causes—not complete beings.

Furthermore, there are various modes of the causes. Some causes are common or universal, such as sunshine and rain are causes of many different effects; other causes are particular or proper, as a certain combination of elements is required for a certain compound; some causes are essential, others incidental; some in act, others in potency. Only a particular essential cause in act is necessarily and actually correlative with its effect, as this writer with this word being written. Such a cause is simultaneous with its effect, and the one can be inferred from the other with certainty. Other modes of the causes do not necessarily entail simultaneity of cause and effect. For example, general causes even in act may be prevented from producing some particular effect, as the sunlight is impeded during an eclipse.

Besides the essential causes which are required for the production of a certain effect, there are also incidental causes, as a musician is an incidental cause of non-musical effects. Effects which occur regularly, that is, always or for the most part, have essential causes, as man is generated by man. But there are effects which occur by way of exception to the rule, which happen infrequently, not always or for the most part, but irregularly and by accident, that is, beside the intention of the agent acting, as a man is killed by lightning. These are said to be chance effects. Chance is admitted as a real cause, but by accident or coincidence. It presupposes the working of essential causes which are regular and determined, and is merely the cause of something which happens by coincidence, over and above the intention of the essential cause.

Here in brief summary we have attempted to present the Aristotelian analysis of the principles and causes of natural things in general, and the

definition of nature. Unless we know what nature is, unless we have certain first principles on which to base our judgment, we cannot determine whether nature is determined or undetermined. This is a crucial problem in modern physics, and modern physicists are looking for the proper principles required for its solution. Many of the questions which they raise and discuss were considered by Aristotle, and it might be worth while for the modern physicist to ponder the Aristotelian solutions, at least on these fundamental points.

In the light of Aristotle's analysis of nature and of the physical principles and causes, we can propose an answer to the question about determinism or indeterminism. It seems clear that there are in the world many primary units of different kinds with determined natures and definite powers and properties. However, natural things have parts and are breakable. They do not always have their integral perfection; some parts may be missing; they are not always able or disposed to act. Moreover, even when they are perfect according to their kind and able to act, they need to be moved or actualized, and they require something on which to act. In a given case they might fail to act for lack of a mover: an atom emits only the kind of radiation which it absorbs. A natural agent which is disposed to act may fail to do so either because it is prevented or because it lacks a suitable subject disposed to receive the action. Not every cloud discharges to the earth.

The regularity of the course of nature manifests that there is some determinism in natural things, and some necessity from the point of view of the matter and the agent. But in a given case the matter may not be rightly disposed to receive an action, and the agent may not be in act, or might be prevented from acting.

The determination in nature is not absolute; the fact that it is not is manifested by irregularity and chance. But this does not mean that there are effects without causes. It merely means that there are causes which are not predetermined to particular effects, but which are merely in potency or which can be impeded or indisposed. The physical world is a basic plurality consisting of many primary units of different kinds, which are not rigidly subordinated to each other but wonderfully coordinated with each other, leaving room for chance and accident but within the limits of natural determination and essential causes.

Moreover, there is a hypothetical necessity or determinism in nature and in natural science, which is a necessity in view of the end or final cause. If a certain end is to be attained, certain means are required on the part of the matter and the agent. If water is to be generated, it must be made from hydrogen and oxygen, and cats are generated from proper matter by cats. Thus the matter and the agent are indeed necessary, and to this extent determined, although the one may be indisposed and the other impeded. But the reason for the necessity is the end: if a given end is to be attaind then certain means are necessary. This determination is universal and admits of no exception, but it is hypothetical determination. In the light of this determination we can get some understanding of the facts of experience, but it does not allow us to predict. It throws light

on the past, but does not reveal the future. The future is for the most part unpredictable not merely because the present is undeterminable with perfect accuracy by us but also because the present is largely undetermined with regard to the future.

The mechanistic conception of the world as a closed system in which everything is actual and rigidly determined to run in one way only is a mere abstraction, opposed to all our experience. Every system which we know contains potential as well as actual principles, and is subject both to intrinsic variation and extrinsic interference. Yet chance and accident are themselves limited by the fundamental determinations of nature. Hence from a knowledge of the present we can predict the future with some probability, but not with certainty.

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Challenges to the Unity of Matter

Who of us did not experience some shock when first he trod those metaphysical pathways that seek out the answer to the question: 'What is matter?' Where before there had been certainty, now there was philosophic doubt. The solid ground of old convictions seemed to disintegrate beneath the feet. For some respected thinkers told us matter was the farthest from the truly real; others said it was some sort of potency; many assured us it had no existence, or was at most nothing but energy, or light, or activity, or process. And far from satisfying the inquisitive mind, scholastic philosophy seemed only to raise more questions, to state paradoxes, and to offer a merely 'probable' theory, which scarcely got a respectful hearing any more.

Does that naive solid unity, the material thing of our prephilosophical days, survive the slings and arrows of philosophical theories? Can hylomorphism still rise from new graves, along with other metaphysical corpses? This paper will present some history and some few findings in the science of today, to estimate their impact on Cosmology, both scholastic and non-scholastic. Look for no learned research in natural sciences. 'Peritis in arte credendum est'; a layman in science will humbly take his data from competent observers. Look for no philosophical analysis or fresh exposition of hylomorphism; that would be in this audience as vain as carrying cranberries to Cape Cod. Of course reviews of the thinking in these matters have been made before, in the proceedings of this very association. But the question is perennial, and helpful discussion is ever useful, especially to those of us who instruct beginning metaphysicians. Always we seek ways to propose accurately our venerable theories, and means to meet the challenge of modern theorizing about this brave new world.

To the common man it is clear that material units are, and it is obvious what matter is. It ceases to be so obvious on analysis. In our own time, when the inquiries of micro-physics might have made us optimistic of some light and some final answers on the subject, many philosophers, and many micro-physicists are inclined to plead ignorance to the ultimate question. Today we read that the ultimate investigation into the nature of matter is useless as well as disillusioning. One is reminded of what Socrates said to Cebes about a related question, and there is still pertinent truth in his irony, "When I was young I had a prodigious desire to know that part of philosophy which is called the investigation of nature; . . . (but) at last I concluded myself to be absolutely and utterly incapable of these inquiries, as I will satisfactorily prove to you. For I was fascinated by them to such a degree that my eyes grew blind to things which I had seemed to myself and also to others, to know quite well; I forgot what I had before thought were self-evident truths."[1]

What is matter? The first answer, that of pure atomism, is a natural one. Leucippus, in the fifth century before Christ, pictured unlimited numbers of solid atoms, the 'what is', moving about in a void, the 'what is not'. So said Mr. Whitehorse,[2] and twenty five centuries later, Mr. Whitehead echoes him, 'actuality is incurably atomic.'[3] The atomic answer has always had proponents, but it has never been able to meet the requirements of a 'form' for whatever is intelligible. Atomism is always a crass philosophy. Even the pre-Socratics had the insight that matter is somehow indeterminate and boundless, demanding to be informed to be known. Plato and Aristotle both reported and developed the idea. The former envisioned matter as an indeterminate void into which are reflected the pure rays from the truly real, the ideal forms of things. Aristotle substantially united the two principles; matter, limiting things and accounting for the manifold, and form specifying and perfecting things and accounting for their knowable natures. Intelligible forms have been an insurmountable roadblock to atomistic thinkers ever since, and those who try their way around the roadblock end in a morass of unintelligibility. The atomic mentality divides and divides, as if to find in minuscule bits the answers that were so elusive in regard to observable chunks. Most of the questions about solid unities hold in regard to the bits as well as the chunks, but it is only after mental excursions into the field of the 'unobservables' that some observers despair of the answers and abandon the questions.

Aristotle reports that, among the seekers of the causes of things, material causes were first invented and found inadequate.

> One might think the only cause is the so-called material causes; but as men advanced, the very facts opened the way for them and joined in forcing them to investigate the subject. However true it may be that all generation and destruction proceed from some *one*, or (for that matter) from more elements, why does this happen and what is the cause?[4]

[1] Plato's Phaedo; (Jowett trans.) (Spephanus folio, 96).

[2] Leucippus, see Bakewell, CM Sourcebook in Ancient Philosophy: p. 57; Scribners, 1907.

[3] Whitehead, A. N., *Process and Reality*, p. 95 (1941 edition).

[4] Metaphysics I, 984a (Ross transl., Oxford, 1926).

More dynamic philosophies than atomism have an ancient history too. The Philosopher (Aristotle) would consider not only the material stuff of things, but their efficient, final, and formal causes. Dead, unenergized matter can be but a partial explanation of bodies, which act and show forces and tendencies. And as far back as Thales we find an expression of the 'field of force' idea, when he wondered at the electric effect of rubbing the amber. And the magnet fascinated him, for seemingly it had a soul because it attracted the iron.

The 'force point' answer to questions about matter have always appealed to the thoughtful, and the early times of modern philosophy provided many formulations. The monads of Leibniz and the attractions and repulsions of Boscovich won enthusiastic supporters despite the apparent failure to account for extension in bodies. Leibniz, reacting to Descartes, and a healthy corrective to the Cartesian picture of matter as extension merely, was carried too far. He clearly saw[5] that force was more than motion, and more important. But when he says the "force is more real . . . and something different from size, from motion, and from form, . . . so it can be seen that the whole meaning of a body is not exhausted in its extension," though it is true and needed saying, perhaps it influenced Leibniz to take an extreme view of body in his Monadology. His monads are indestructible, indivisible points of energy, equipped with a kind of representing power of all else in creation. His answer to the question 'What is matter?' is some independent power, substantial, yet incapable of existing without action, reducible really to an energy point. Even in the 'Discourse on Metaphysics,' written twenty five years earlier, every person or substance is pictured as 'a little world which expresses the great world'[6]; and 'Everything when it expresses its virtue or power, that is to say, when it acts, changes to better, and expands just in so far as it acts.'[7] His insistence on a 'more metaphysical consideration' involves abandonment of extension. "It is possible," he says, "that the ideas of size, figure, and motion are not so distinctive as is imagined, and that they stand for something imaginary relative to our perceptions, as do, though to a far greater extent, the ideas of color, heat, and other similar qualities."[8]

The classical philosophers in general have not been kind to the traditional and common sense notions of the material unity. It is not necessary for us to recount the contribution of Berkeleian spiritualism, of Spinozan monism, of Comte's positivism, and of the idealism that followed on Kant, to the breakdown of substance and matter. The parlous state of philosophy today can be blamed on these progenitors.

When we come to our own century, the world view of matter has been considerable revised, and is still undergoing change. The Cartesian-Newtonian universe seems to be in the discard because of the startling findings of men like Bohr and Michelson. We have grown accustomed to new

[5] *Discourse on Metaphysics*: XVIII; Open Court edit., 1902, p. 33.

[6] *Ibid.*, XVI, p. 27.

[7] *Ibid.*, XV, p. 26.

[8] *Ibid.*, XII, p. 18.

terms like 'half life of radiant matter,' 'indeterminacy,' 'discrete amounts of energy,' and 'cóncentrated fields of energy within the molecular structure.' The block, machinelike world that had served well for golden generations of triumphant science had to yield before the astounding observations within the atom, and in the far reaches of space among the galacies. It is no little terrifying to be told that space bends, that our perceivable universe is something like a patch of events upon the surface of an expanding balloon. Because we find it difficult to picture the electron moving with incredible speed in a microscopic orbit, or to measure mentally the distance from earth of some bright nova in the heavens whose explosive disintegration years ago makes it bright for us today, it seems that the reliable world of the testtube and the measuring stick is coming apart at the seams.

We have noticed that the learned reaction to these wonders, and the revolution in thinking in our times often takes the form of a return to the metaphysical. It has a heartening sound, but such a turn is not without its perils for minds long closed to that discipline. In some basic natural mysteries, the metaphysical has often been a refuge of ignorance and a delusion of pompous verbiage. To sincere investigators, such a degenerate mtaphysics will soon be evaluated and discarded, perhaps in favor of a complete agnosticism in regard to the nature of material things and to the account of their unity. We are proud that scholars are not wanting today who can formulate the scholastic principles for study of cosmological problems; and some of the best efforts of this very association have been so employed. Would that the efforts were more generally appreciated. The contribution we have to make seems to be getting a more sympathetic hearing than before. We may be pessimistic about the acceptance of true metaphysical method and study of abstracted realities by minds conditioned to empiricism, but we can only reemphasize and repeat the principles as clearly as may be. They are being heard. Let me in passing question the wording of Professor Maritain's definition of a philosophy of nature. He insists it cannot be metaphysical. He does not proceed far in his philosophizing about the cosmos without employing metaphysics, yet he seems committed to just that difficult procedure by his initial stand: 'Metaphysical intuition . . . is formally independent of the philosophy of nature.'[9] Such a philosophy must come after science and before metaphysics. The professor immediately retires from this extreme position, saying that though metaphysics presupposes cosmology, this means cosmology 'in its first positions only, and not in its completed state.' The slight ambiguity might bother non-scholastic seekers after a metaphysical formula who have not digested the message of the 'Seven Lectures' and the 'Degrees of Knowledge.'

The thought occurs also that our metaphysics, though it provides the tools for analysis of the findings on matter, is not itself untainted by the 'solid container' idea of the universe, and by other naive errors we are now

[9] *Philosophy of Nature*, pp. 2 to 4, and *passim*.

asked to discard. How many a Hylomorphist has told himself that prime matter is mere indeterminate potency, and not meant it at all in the sense it was potency for Aristotle or for Divus Thomas? Perhaps for them matter was much nearer nothing than for us. They had never read Newton or Descartes, and would perhaps have accommodated themselves more readily than we to the paradoxes of today. And if the present thinking harks back to old formulae, it is more than ever our duty to present the perennial pirnciples as the best tool for the analysis of matter.

Most prominent among the new ideas perhaps is the disappearance of the 'absolutes' of time and space, and few of the moderns bother to recognize that they had never been absolutes in scholastic philosophy. Popularizers of a generation ago, after Russell and Whitehead, found matter to be made up of events. An event is a physical phenomenon which with other events in a series gives us the impression 'of a solid body existing in time.'[10] Such expressions are common, though scarcely understood, and we have become inured to the description of body as a construct of 'a dense series of events' like the successive pictures in a movie film. Our intelligence has ceased to be affronted by accounts of a physical entity as merely the intersection of a world line of an event with the world line of an observer. We are gravely informed about a new dimension. "Distance is the first dimension, plane surface the second, depth the third, and time and the quality of change the fourth" . . . and that "these four seem to be enough; though events may have more dimensions, our minds are not used to using them."[11] I wonder if any honest human mind ever gets used to using the fourth one.

The old ultimates in the description of matter seem to be losing ground, and even matter and energy are said to be interchangeable. The spotlight of the theorists seemed to be turned on light, the only remaining universal standard. Mr. Barnett, in that excellent little work 'The Universe and Doctor Einstein,' points out[12] that the eighteenth and nineteenth centuries were given to proving that light was waves, and the first quarter of our century to proving light to consist of photons or energy particles, from Einstein's interpretation of the photoelectric effect. After 1925, the work of DeBroglie turned the tide again in favor of 'matter waves.' Later still, the mathematical formulations by Heisenberg and others permit the description of quantum phenomena in terms either of waves or particles. Some have called them 'wavicles.'

An important modern answer to the old problem is proposed by the English philosopher, Dr. Herbert Samuel. Energy is the ultimate stuff. Active energy provides the all the physical existence in the universe, while quiescent energy constitutes the other state. The two states of energy, active and quiescent, easily merge and change one into the other. There seems to be a echo of Aristotle in it, from book lambda of the Meta-

[10] Brownell, *New Universe*, p. 26.

[11] *Ibidem*, p. 18.

[12] Barnett, *Universe and Doctor Einstein*, p. 21.

physics. Ponder this passage from Samuel's work of last year, 'Essay in Physics.'[13]

> Being quiescent, it (energy) is undifferentiated and produces no phenomena. It cannot therefore be perceived, or defined, or described, and nothing can be located or timed by reference to it. It does not follow from this that it is non-existent. Its existence is demonstrated by the emergence and behavior of active energy.

Tendencies towards the 'metaphysical' like this one are welcome, but do not be too quick to discover primary matter and substantial form!

Dr. Samuel feels that a return to ether might be necessary 'to cover energy in both its forms.' It is not to be gaseous nor quasi-gaseous like the old ether, but rather energic, and it is brought into the picture only as an unavoidable carrier. We are again reminded of primary matter in this quiescent ether. He goes on:[14]

> It would appear that activation may be caused by some kind of impact upon the quiescent ether. But we are assuming that nothing exists other than undifferentiated quiescent ether except active, and therefore differentiated, ether. This, we shall find, so far as at present recognized, is in the form of ether waves or ether particles. If there is an impact, it would therefore be the impact of waves or particles which had started an activation.

Despairing of explaining the original activation, as by some Prime Mover, Dr. Samuel says we must assume the particular activation in time and space by some kind of impact. 'This would consist of impulses from ether-waves or ether-particles; or groups of particles organized into atoms, or groups of atoms organized into molecules and material objects.'[15] So we find again an analysis into sub-atomic particles, with a residue of nothing but energy, unless one wishes to pass into the conceptual order. The ether particles seem to be proposed as activating constituents of the material unities.

Summoning up again the unobservable ether, or some substitute, throws the mind back to a theory of waves of this unobservable for the propagation and the carrying of the ultimate reality, whatever it be. But waves always seem an illusive explanation; convictions based on them prove insecure. The wave is not a proper carrier; it is not the medium, but its configuration. The wave is not the particle, but its way of motion. In a wave, the energy only is carried forward, and not the medium itself. Particles "vibrate back and forth or up and down about their positions of equilibrium."[16] The word wave or wavicle might deceive one into thinking the series of waves represents the speed or the motion of a particle. But consider that neither the medium nor the particles move forward in the kind of sine curve usually used to picture the wave. Detached particles in the waves do not move forward, except very slowly. Watch on the

[13] Samuel, H. L., *Essay in Physics*, pp. 50-51.

[14] *Ibid.*, p. 56.

[15] *Ibid.*, p. 56.

[16] Schaum, *College Physics*, p. 160.

beach while a bit of flotsam approaches the shore. It might be a challenge to any thought of waves swiftly carrying their burdens to great distances. And if the wavicles themselves are naive solids, all the questions asked about the greater masses of matter apply to them as well. And if the wavicles are simply energy, distributed as rows, or points, or movements, in none of these is solidity implied or verified. It is true that if we admit waves, something must be waving, and wave mechanics answers many a question about the measurement of motion. Still there is apt to be delusion when waves are proposed in the account of the constitution of things. It may solve many mysteries, leaving untouched the basic one. It assumes matter rather than explaining it. It may even be the configuration of matter, but waves cannot be the material cause, still less the formal cause.

There is another 'return to the metaphysical' which I term 'conceptual,' and find even less satisfactory with its answers. For instance, Cassirer finds the atom a 'relational concept' merely. His philosophical analysis of Einstein's theory of relativity is an authoritative work, but the substantial unity which is the material thing falls a casualty to his kantian mode of thought. He says:[17]

> The substantial inwardness of the atom takes on fixed and tangible form for us . . . when we trace, especially in the involved chemical constitution formula, how the atoms are situated relative to each other, and how they are mutually connected in the unified structure of the molecule.... (thus) they generate, by their number and relative position, a certain structural outline.... The atom is never the given starting point, but always the goal.... the wealth of content it gains in the progress of scientific investigation never belongs to it fundamentally, but is related to another kind of empirical subject. As we apparently investigate the atom itself in its manifold determinations, we at the same time place these different groups of circumstances in a new relation to each other.... (the atom functions as a unitary center) ...and we are concerned not so much with relating the diverse series (of circumstances) to the atom, as rather with relating them reciprocally to each other through the mediation of the concept of the atom.

Cassirer holds this conceptual atom as a unitary center to be a good example of the kantian idea in its regulative use. Empirical knowledge cannot get along with the general concept of substance, but 'Philosophical progress lies in the evaluating it as a concept.' The persistent illusion of a 'thing-like bearer' into which the scientist condenses the wealth of his experiences is pardonable but of the noumenal order. Even the scientist may (quotes) "group his factual material in a single focus which will appear to be the real, unitary object, instead of what it is, a mere virtual point."[18] This real, unitary object is unrealistic in more than one sense to the näive mentality of the common man. This philosophy of matter is no more than a Phenomenalism. It is a consequence any thinker must embrace once he has relegated the things in themselves to the noumenal order. So the scientist constantly deceives himself: he demands empirically a grouping of his material while he is at work upon it. The grouping, and

[17] Cassirer, *Substance and Function in Einstein's Theory*, p. 207.

[18] *Idem*, p. 210.

illusion of permanence, is only an appearance. The real matter, particle, or chunk is only a 'virtual point.'

Whitehead's contribution, the difficult process philosophy, is 'conceptual' in the same sense. It is an attempt, by a competent mathematician become philosopher, to rationalize the complex relational role played by sense data when we seem to see real objects. We see an auto, and touch it; but the eyes and the hands are 'in the past,' (the almost immediate past), and the auto is in the present. The auto is objectified by a spatial region with its perspective relations, and this region is in fact 'atomized by the members of the nexus' of actual entities or sense objectifications.[19] An abstraction is effected by the 'prehensive' operation from the multiplicity of members (sense contributors), 'and from all components of their formal constitutions, except the occupation of this region.' This attempt to be metaphysical is the 'organic' philosophy of becoming, and the unity of the material thing does not emerge very secure from the 'organic' analysis. It is the process, the concrescence or event, that organizes any new entity, and the only reality is in the becoming. Our material particle is merely a droplet of experience and can be described as the 'novel one.' There is never any perfected reality, for completion is foreign to this type of thinking. Actuals are called 'concrescences,' Whitehead's name for the process in which 'the universe of many things acquires an individual unity in a determinate relegation of each item of the many to its subordination in the constitution of the novel one.'[20] Yet there are no completed sets of things, each concrescence being a datum for a new concrescence. So the actual is always relative to further novel becomings.

In this process account the complex unities (matter) emerge from the indiscrimate entities which are the universe disjunctively, and which become this actual one occasion which is the universe conjunctively. An objectification, or actual existent, like a chair, issues in this nexus or unity. Material things then are actual occasions, prehending or grasping into the concrete unities of their own awareness their relevance to all else. Awareness does not mean they are all minds, nor bits of knowledge. Any matter, and any matter of fact, is, in its moment of actuality as an 'organism,' a togetherness of concrescent prehensions. Whitehead's phrasing is subtle, but it is clear why he says so often that reality is incurably atomic, both in its constitution and in its lack of duration. Only the indeterminate is continuous; actuality is always in bits; it no sooner is that it isn't.

Strange it is to find a philosophy of becoming that is atomic. One expects atomistic theories of matter to seek a solid, unchanging nucleus or ultimate. Perhaps, as Dr. Vincent Smith points out[21] the empirological temper prefers not to find an ultimate formal unit in these days of atom smashing. Besides, these theoretic atoms, which 'for all practical purposes'

[19] Whitehead, *Process and Reality*, p. 97.

[20] *Idem.*, pp. 321-322.

[21] Smith, *Philosophical Physics*, p. 411.

are indivisible, provide a threshold between the area of matter and that of energy. And today we seem compelled to grant there is passage from one to the other and vice versa. Atoms are not further divisible into homogeneous parts, and within the atom some of the lesser parts seem to have no 'rest mass,' nor any means of communicating to us their intelligible forms except by what has been called 'photonification' or 'lucification.' Does energy qualify as a constituent of the atom? Most scientists would answer with a confident 'yes,' but we need not rush to agree, even in the light and sound of atomic explosions. It is not quite the same thing to admit that matter seems to take on more mass on acceleration, and to admit that this 'proves' the expansive intra-atomic particle or the expanding universe. When we lose touch with the perceptible world, we should tread cautiously. Science is sometimes constrained to transcend the sphere of sense, but as Einstein says, the price is often emptiness of content. Dr. Samuel,[22] without regret, makes the transition from the 'mass' theory to the 'field' theory, and notes the advantage seldom noticed by physicists, namely that 'the field makes a separate concept of space (as distinguished from space content) superfluous. The space is then merely the four-dimensionality of the field, and no longer existing in isolation.' We can however reserve our judgment on mass as nothing but congealed energy.

Though we may show a proper hesitancy in agreeing with every embarrassing dictum about the makeup of the material world and the matter unit, we owe it to ourselves and to all seekers after the truth to listen with patience. Our reasoning is not always easy for the scientist, just as his findings are sometimes hard on our cherished theories. I used to be annoyed with the chemists for constructing those plastic or wooden models they use to illustrate molecular structure. You have probaly seen them, all knobs and joinings, and an invaluable help in teaching. Now, no one ever saw a molecule, and these seemed to me a false pretense at picturing it. But after auditing a survey course in chemistry in order to freshen up on old ideas, these handy toys no longer seemed meaningless, nor did the chemist seem to be claiming too much from them.

Sometimes the scientist oversimplifies; he abhors a number of principles where one can be made to do. For example Einstein finds intolerable to his theoretical spirit the two variant and independent structures of space, scil. the electro-magnetic in the microcosm and the metric-gravitational in the macrocosm. The purpose of his recent work is to construct a bridge between them with his unified field theory. His recently refurbished formula for the unified field was reported with the usual chorus of admiring 'Ohs' (omne ignotum pro magnificum habetur). But the genius himself simply said his task now was to try to relate the formula to the hard facts of reality.

So the unity of matter is confronted today with new and difficult concepts. How shall we best meet the challenge? First of all by thoroughly assimilating our traditional metaphysics, its emphasis on principles, on

[22] Samuel, *Essay in Physics*, pp. 160-162.

formal causes, on substance, and on the analogy of being. With this background, we confidently enter the fields being plowed by Whittaker, Einstein, and Samuel, and others, in so far as our native competence permits. Some among us have made more than a start, they are over the fence and plowing away. The work of Fathers McWilliams and Bittle, of Doctors O'Grady, Collins and Smith, and of Professor Maritain, just to mention some attending this convention, must occur to all of you. May their harvest in this difficult soil be worthy of their efforts and of the good seed they are sowing. Prosit the work!

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Comment on Father O'Mahony's Paper

Father O'Mahony took the historical view. I shall complete his topic with a few additional notes.

He gave us the keynote to the difficulties we find in modern science. I shall take a few examples from physics because among the modern sciences this is the one which *claims* the possession of all embracing formulas through which the whole material universe can be explained. In this regard physicists are bolder than their fellow scientists. Now, if we can bring physics in harmony with our philosophy, then the other sciences with more modest claims will cause no additional difficulties.

The philosopher and the physicist have parting ways in their approach to the study of bodies. While the philosopher is looking at bodies as units, as fit subjects of existence, as complete natures, the physicists reduce them to their elemental particles, to get closer and closer to matter.

How close modern physics came to the potency of matter is hard to tell, for who can measure pure potency?

But they went some distance from ancient atomism. I turn to modern physics with two questions in my mind: First, why is the formal and qualitative ignored and the material and quantitative overstressed? Second, why is it that physicists today are not satisfied with generalities *less* than all embracing ones? To the first, I found the answer in their method. This can be applied only to things which can be measured. But the difference of *nature* in one composite and the other cannot be measured. Even energy or quality has to be sought by physics as "how much" to know the difference between one energy and the other. But how can the difference between fish, turnip, and sulphur be *measured?* As to the second question I found many reasons why physics offers such lofty universals. When bodies are analysed to the point that elementary natures are found, of which there are fewer types and many in number, fewer types of motion need to be studied and a great many instances can be produced for each. The formulas for these types of motion may be extended to all elementary bodies. The fatal step from here is, when all bodies are explained in terms of these generalities and all bodies are treated as if the higher natures were merely the sum of these lower natures.

I suspect a *secret ambition* in the greater and greater generalizations of physics. It is the desire to know "being as being." Though the scientific method does not permit this achievement, the scientists are flirting with the subject of existence. There is an implicit desire to anchor bodies in the metaphysical order.

However, I understand the *explicit* purpose of stretching a generality further and further. It is the question of using formulas as models for more and more fields of interest. The model is hypothetically extended to new cases and if it works a new field is in man's power. But technique alone does not satisfy the human intellect. Nor does technique need such generality which explains the whole universe. The know how requires special formulas.

Some scientists today think they arrived at philosophy when they deal with great generalities. That philosophy is not a mere question of generality does not occur. Because everything they deal with is measurable, and the general laws of quantity can be used to express their findings, they think an even more general mathematical formula will give the key to being as being. That being is not quantity, nor a body, nor any part of a body—but that some beings have quantity because they are bodies, is lost from view. But the aspect of being as being should not be the perview of physics. It is not for the physicist to explain the ontological. All the philosopher asks is, to keep the physical hypothesis within their own domain. If that is the case, their generalities will not deny what the philosopher has to say. Only when the physicist assumes the role of the metaphysician and demands the acceptance of unrealistic generalities as the law of being, the philosopher raises objections. For, in that case the physicist outsteps the province of his principles.

Aristotle says—what the first principle is in relation to nature, is in the province of metaphysics.[1] But the modern physicist has not the mind of the metaphysician. His ideas are not in the third degree of abstraction. Not even in the first degree, as long as the generalities in question are not expressive of nature, but are formulas made for the artificial manipulations with particles. In that case his aim is not to seek what is intelligible but to make something practicable. However, the degrees of abstraction are the degrees of intelligibility, expressing things as they are, independently of man's intervention. On the other hand some generalizations in physics are not only based on artificial manipulations with things, but the concepts themselves are extended *by* an artificial elaboration of the mind. An example to this the wave theory, which was stretched from light to explain the atom, then matter itself.

The philosopher should be understanding towards these strivings of the scientists. After all, the human mind cannot be separated from being. The scientist who is in the possession of a method of discovery sometimes cannot resist the urge to draw closer and closer to being. At least to try. At this juncture the philosopher is glad to point to the *ultimate principles*, but in many cases he is rejected.

There is no conflict between philosophy and physics when the aim of a physical theory is technique. Man, the artificer can harness forces without knowing much about nature. On the other hand, the philosopher need not know man made devices to understand nature. Yet it is for the philosopher to point out instantly, when artificial things are identified with nature. Regardless what effect is produced in atoms by a cyclotron or a betatron, there is a natural aptitude in them which persists.

The philosopher does not belittle the marvelous know how of artificially accelerating the atoms. Only, much profit can be gained if the philosopher is heard when pointing to nature, since upon nature man must build all his devices. True, we can be told off; scientists think they got along very well without the philosophy of the scholastics. But I wonder whether they really did. I wonder whether mankind did?

[1] Aristotle, *Physics* I, Ch. 9, 192b 35.

In the theoretical part of modern physics one can find an implicit admission of the need for philosophy. It is the search for the "beyond physics," a search of that which is beyond the intricate network of motions. So far the theory of relativity and the quantum theory are the closest to a philosophy of physics. Yet they are very far from philosophy itself; because the generalities of philosophy are *true universals* expressing the absolute, the necessary, and the essential in contingent things of nature; while physics merely sums up contingent events in their contingency.

For instance when Planck (1900) originated the quantum theory, he was experimenting with black body radiation. He had an idea that energy is emitted and absorbed in definite quanta. As he watched energy bursting out he noted it varied from level to level, but always came in a definite quanta (radiation quanta).[2] Then Bohr, further generalized, when he began to apply it to the field of atomic structure, and the origin of the spectra. (Quantum theory of the atom). And more recently it was applied by wave mechanics. Thus a great generality was arrived at by the summing up of various contingent events.

Why should anyone believe these theories conflict with philosophy? I do not know. Surely they will not conflict, unless, they are used as substitutes for philosophy. To illustrate my point with an example—why should the wave theory in itself conflict with the ontological unity of bodies? This truth is evident to intelligence and it is not dependent on accounts of ultra-microscopic nor super-telescopic events. Our thesis is based on a more solid foundation than a man made machine which can divide and measure quantity. But even supposing physics would remain in its own field of technique and theory, and say nothing about the natural unit, the question would still persist. Because bodies are indeed complex, yet each body is a being. Only the answer is not in the province of measurement. So while the scientist divides what is divisible, and measures what is measurable, the philosopher sees what is intelligible. What exists is a unit. For how can the actually divided be divided? And how can real quantity be measured unless it belongs to a body? Or how can a particle be taken unless it is *from* a body. Otherwise it would be an abstract division of extension into its intelligible quantities. But an electron so they say belongs to an atom; and a photon is taken from an electron.

Fr. Mahony sees the puzzle of bodily unity especially in the various interpretations of matter. Indeed modern physics deals with bodies as if they were merely matter. The ancient atomists suffered under the same illusion. Aristotle knew why they confused substance with matter; because matter *is nearly substance;* it is substance imperfectly.[3] It is a part of body, but that part which persists through the changes of nature.[4] Thus nature can be taken in the sense of matter, but it is not its full explanation.[5] The difficulties of ancient physicists who were concerned with matter only, is similar to modern physics. The ancients thought, as the

[2] Richtmyer, F. K., *Introduction to Modern Physics*, pp. 139-40.

[3] Aristotle, *Physics* I, Ch. 9, 192a 5.

[4] *Ibid.*, Ch. 9, 192a 15.

[5] *Ibid.*, II, Ch. 1, 193a 5-15.

moderns, that they were speaking of the subject of existence. But in fact they were not.

Empedocles thought the four elements were the real subject, these he admitted to the domain of being, but the vast variety of natures, he saw as mere mixtures. Likewise in modern physics, the material principle is not potential nature, but actually has its definite nature, atomic, and is treated as if it were the only subject of existence.

St. Thomas, understanding so well the subject of existence, never forgot that only complete things can exist.[6] Moreover, a body can never be made up of bodies, unless we speak of an accidental unit, e.g., a chair, and not of a nature. An aggregation of natures cannot explain nature. A horse cannot exist in such composition, because each small body in it would be a complete nature having its own existence. Nor could the co-operation of each small body explain the operation of the horse, because there would be many things moving divided in being. But nature means one principle of operation.

Ancient or modern physicists, in their own way, when speaking of nature, understand *that*, which is the principle of motion and of rest, *per se* and primarily. Aristotle distinguished natural things from artificial ones by the impulse towards change, and the tendency to rest in their own good.[7] I venture to say nature is not denied in modern physics, though neither is it explained. They say there is an impulse in the atoms. They have mass and energy. The mass does not explain nature because atoms of the same mass have different energies; they have different electric charges which can be seen on the spectrograph. But there is motion, there is an impulse in them, there must be some *thing* in motion, and whatever that thing is, it manifests a duality.[8] Aristotle says: many thinkers agree in admitting some contraries as principles in nature, but not every contrary is a *primary* one. Among the many contraries given some are more intelligible in the order of explanation, others are closer to experience.[9] But the contraries which *constitute a natural body* must be first principles, and can be one only, because substance is a single genus. In every genus there is one contrary,[10] hence there are many contraries in the various orders of accidents.

Contrariness is manifest in the waves to the observation of modern physicists. Waves have a magnetic and an electric field. This duality is a property of the whole family of waves from the longest infra red to the shortest ultra violet rays, the x-rays and the radio waves, the invisible and the visible rays. It is due to the electric field that charges are set into motion, while the magnetic field is the silent partner. This dual explanation of the wave is correct, transmitters such as the radio and the TV were made according to the formulas given by Maxwell and Herz.

[6] St. Thomas, *Summa Theologica*, I, Qu. 45, 4, resp. *Anodl.* IX a3, *Qu. Disp. De Unione Verbi Incarnati*, a4. *De Patentia Dei* III, 3, ad 2. *Cont. Gent.* IV, 49.

[7] Aristotle, *Physics* II, Ch. 1, 192b 10-25.

[8] Aristotle, *Metaphysics* XI, Ch. 6, 1063a 15-25.

[9] Aristotle, *Physics* I, Ch. 5, 188a 20.

[10] Aristotle, *Physics* I, Ch. 6, 189b 20-25.

The artificial effects which can be produced in atoms speak of their duality. When machines were devised to accelerate the energy of the atoms so that energy may be measured, a new type of change was induced in them. The new energy disintegrates by radioactivity. There are many atoms which can be made radioactive by bombardment, and in them radioactive decay is studied. Thus the cyclotron can accelerate protons, deuterons, alpha particles. These are the heavy ions. The betatron can do the same service to the electron. Physicists think some of the proton, neutron, alpha parts, electrons, positrons, and gamma rays which are thus emitted, exist *somehow* (potentially) at all times in the nucleus.

Then, physicists say, each atom has unity. The proton neutron particles are closely packed in the atom. What the nature of the force holding together these parts, is a mystery to physics. A Japanese physicist, Jukawa, recently advanced an explanation of this force, but his theory is very difficult even for physicists. But they all think, the great solidity of the nucleus is due to this force.[11] Of course whatever the nature of this force is, it cannot be the reason for the *formal* unity of the atom. Yet it does not exclude the formal reason which accounts for the essential unity, if there are such entities as the atoms. The atom is an individual entity, a material substance so the physicists say. If this is so the atom cannot be explained philosophically by the aggregation of parts and forces. Philosophy should not be indifferent to the atomism of modern physics. Aristotle considered it an important topic and devoted much of his *Physics* and some of *Metaphysics* to discussions of the atomism of his day.

As I mentioned before, modern physics is drawing closer and closer to matter in its nakedness. The forms to which they reduced matter are very primitive. According to the hierarchy of forms in nature what the physicists have found may be the lowest types; *as acts*, they are not very high above the potency of matter. But even the physical theory when put to application showed the duality in these little bodies. There is a passive principle by reason of which they *can be excited*, and they *all throw off* the plus energy.

The hydrogen model was built on the theory that there is arrangement of parts in the atom. There is *order and design* in the body of the atom. Experiments show the model is a workable one. The pattern made by man, corresponded with the findings. The idea for the model was, that there is a repulsion and attraction force between the nucleus and the electron of the atom, which keeps in balance the distance between the parts. If such balance is needed for the atom, *any disturbance of that arrangement will be righted by nature.* The idea was correct. When hydrogen, which is not radioactive by nature, was forced into an excited state, it emitted energy. This was due to the fact, that its electron particle was driven into a different arrangement than its natural state requires. The electron could stay in the abnormal state for a hundred millionth of a second. During this time it could make 10 million revolutions around the nucleus. Meanwhile, *what is natural persists*, and after the wild gyrations wear off, the electron comes back to its natural orbit, which is nearer to the

[11] Brown, Thomas B., *Modern Physics*, p. 343.

nucleus. On its way home, the electron emits a photon. There is a variation of orbits possible for the revolution of the electron around the nucleus of the atom. On its way home from the abnormal revolutions the electron may drop from third to second, or from third to first, or from second to first orbit. The heavy lines on the spectograph show, some drops happen more frequently than others. In spite of this irregularity there is the regularity that each atom emits one photon at a time, and all emissions end when the electron comes to its normal orbit.[12]

These experiments do not tell us what is nature, or whether the atom is an individual substance or not, but they do give an example to the truth that "nature is a principle of motion and of rest,"—and nature is that primary something to which this motion and rest belong *per se*, and not *per accidens*; i.e., it is a substance. Motion, to bring about what is suitable to the substance so as to rest in its good.[13]

It seems to me we have an implication of this in what the physicists have to say about the hydrogen and its fellow atoms. Physicists do not say this explicitly, because they have no language for it. Their judgments bear on a different field of objects. But what they say points to the truth, *there is order in nature and nature keeps its order*. Why it does, is not asked from the physicists who deal with atoms only.[14]

Beyond the discovery of modern physics there is the truth: *if* there are such sub-microscopic bodies, they have their nature, they have their inclination, their good and an orderly distribution of parts. If this is so, they must have their ontological unity. As little as an atom may be, it cannot be merely the sum of its parts. The electron and nucleus are not thrown together in a heap, but ordered according to the need of nature. Aristotle says, even a small, man-made thing such as a syllable for example, need to have a formal reason for its unity if it is to be more than a heap. Thus "ba" is more than the two letters b-a, because it is actually formed, it is a unit.[15] For so much more reason, a natural thing cannot be the mere summing up of its parts.

Physicists tell us, the atoms are substances and they are composites, and each is an individual entity. There must be a formal reason for their unity.

As I was working on my paper, my attention was caught by the latest theory of Einstein which came into print recently. It caught my interest on account of the opposite course it takes from contemporary physics.

For one thing, he wishes to reduce the Universe to a single generality if possible. The generalizations attained in the past when he identified matter with energy; space and time; gravitation and inertia; left still two fields to be made one—the field of gravitation and the electro magnetic field. With a new "Unified Field Theory" he hopes to give one all embracing formula as a key to the material universe. It will absorb all

[12] Thomas Brown, *Foundations of Modern Physics*, pp. 154-49.

[13] Aristotle, *Physics* II, Ch. 1, 192b 20.

[14] Aristotle, *Metaphysics* XI, Ch. 3, 1061b, 5-15.

[15] *Ibid.*, XII, Ch. 4, 1070b, 1-10.

the other theories it was predicted. He admits there are still some mathematical difficulties in the preparation of a *working* formula, but these difficulties can be overcome he thinks. After that, the new theory can be used for experiments.

The physicists are sceptical about the possibility of such a *working* formula. They hold fast to the quantum theory which maintains there are discrete quantities, and that the material world is dual in nature—waves and particles. Einstein wishes to present a universe which is an endless stream, where matter is one continuum.

What are the philosophical advantages and disadvantages of these opposed theories? It is to the credit of the quantum theory that it does not altogether exclude the existence of natural units. Nor does it deny the possibility of physical change, since it admits some duality.

The disadvantage of the quantum theory is, it does not allow finality and efficient causality. Its indeterministic principle, or rather uncertainity principle denies the intelligible cause and effect relations in the material universe.

Einstein, with his "Unified Field Theory" on the other hand, aims to correct this flaw. He wants to hold fast to an orderly universe, where events are related to their causes in such manner that intelligence can discover their fixed ends. This requires established natures, working according to a definite causality. The atoms, Einstein is anxious to place into their proper order in relation to other things of nature. This is indeed a praiseworthy project. But, his unified field theory rejects singularities, upheld by modern physics. I wonder if without the singulars the universe will not be freed from the substances which make up the orderly relations of the whole, which is the Universe?

However, if Einstein's objection to singularity is against that part of physical theory which sees no other substances but the atoms, I wish him great success. If the atoms are placed in their proper order in the hierarchy of material beings we may see again a theory of an orderly universe.

As far as I can judge from my modest understanding and the insufficient accounts to which I had access, Einstein is motivated with an earnest desire to leave being where it belongs and as it is made by God. He would also like to see such physical sciences which can define physical beings. He thinks the quantum theory is inadequate for that. I quote: "One cannot keep side by side the concept of field and particle and expect physical descriptions." Also I quote: "General relativity is the only means to avoid the *no-thing* inertial system"—which is offered in quantum mechanics.

But he thinks, in order to formulate the general relativity theory, it is necessary to have the Field Concept, a single universal for the entire material world. This concept, however, must forego singularity, since that is opposed to the concept of generality.

My readings impressed me with the great emphasis on the concept. And I was wondering whether the same fatal concern with concepts, we have so often encountered in the history of philosophy, is still not the obstacle to face reality? And I also wondered: whether or not, this great

concern with concepts is the result of contemporary materialism which made the world unintelligible to scientific observers.

Both the philosopher and the physicist can deal with the beings which make up the material universe. There is much room for both. After the philosopher considered nature in its first principles there is much to do for the physicist. The great variety of bodies and their changes cannot be dealt with in one science. Nor should the more profound interest of natural philosophy be centered around the contingent events in bodies. Just as metaphysics ought not be concerned with the question of the movability of bodies. As Maritain says, these are different fields, each is a distinct type of knowledge. They are not merely subdivisions of the same generality.[16] They ought not be adverse to each other. And they are not.

The ontological analysis of being into essence and existence by metaphysics is not adverse to the analysis of bodies into their essential composition by natural philosophy; and neither of these are adverse to the further analysis of bodies into their energies and particles.

The integration of different fields studying bodies is possible, if each discipline keep in mind the purpose of its science. It is a great folly to think science and philosophy must be in conflict; unless it is due to a false claim by a special science as for example those physical theories that claim too much;[17] or likewise by a false claim that philosophy with its universals can explain all the detail in physical events.

In the past, such false claims were always followed by a suicide of the theory of knowledge.

Today, the idealism which is the baby of empiricism, and the materialism which is the spouse of empiricism are facing each other with suspicion. Light may begin to shine.

Gilson says; "The men of our generation have been born in the universe of Newton; they have reached maturity in the universe of Einstein; they are entering old age in the universe of undulatory physics; and with luck hope to die in a fourth universe as different from Einstein's as his was from Newton's."[18]

In the meanwhile let us hope we will live and die in a universe where scientists and philosophers are engaged in the good work of the intellect, each within his own field according to the domain of his object. Then they will leave the universe as it is made by God.

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[16] J. Maritain, *Science and Wisdom*, pp. 39-40.

[17] Aristotle, *Physics* VIII, Ch. 1, 252a, 30-35.

[18] E. Gilson, Historical Research and the Future of Scholasticism, *Modern Schoolman*, 1951, V. XXIX.

MORAL AND POLITICAL PHILOSOPHY DIVISION: CARL W. GRINDEL, *Chairman.*

Problem: Individual Rights as a Limitation of the Common Good

An adequate treatment of the relation between individual rights and the common good would demand an adequate examination of the theological aspects as well as the philosophical. Such an adequate analysis requires more time than that allotted for this paper. So we must restrict our theological considerations to generalities. However, since grace does not destroy, but rather perfects, the order of nature, we do well to devote most of our time to a scrutiny of the natural order. Indeed, the long-lasting disputes about the nature of the common good have resulted from an inadequate analysis of its philosophical aspects; the philosophy in this case has not been a good handmaid of theology.

For a moment, let us trace the misconceptions about the common good. The first widespread misconception we note in history is found in the Babylonian Empire, where the material, worldly paradise was substituted for the heavenly paradise; Babylon was the first center of an atheistic Communism. The spread of Babylonian culture through Asia Minor and Greece was reinforced by the teaching of the Stoics, who held that man must consent to the inexorable word of the dictator as to his true good. Plotinus' theory of emanation was a further corroboration of the Babylonian thesis, since the governmental head was regarded as the first principle of emanation. The notion of the Communists' Kremlin was first exemplified by the Gnostics, who held that the first principle of the common good was rationalism. Thus the Mid-Orient was well prepared for Mohammed's revolution, falsely justified in the thought of the leading Arabian philosophers, notably Algazel, Avicenna, and Averroes. While Gnosticism was extended into Russia through the spread of the Eastern Schism, the Arabian precisions of Babylonian thought reached continental Europe through the Iberian Peninsula and Southern Italy, especially through the Province of Naples.

However, speculative political justification of this false tradition was not attempted until the fourteenth century; and thus we find no schematic refutation of the tradition in the writings of the thirteenth-century Doctors of the Church. It is notably in Machiavelli's famous work, *The Prince*, that we find mention of the speculative consideration of the material common good as the pseudo-adequate concept of the common good.[1] Through

[1] The explicit mention of Machiavelli's teaching concerning the common good is contained in his *Discourses on the First Ten Books of Livy* (I, 9), which was started before but finished after *The Prince*. Yet the concept which dominates the latter work is evident throughout, notably in chapters 6, 8-9, 14-18. One striking example can be cited from the eighteenth chapter: "...a prudent Prince neither can nor ought to keep his word when to keep it is hurtful to him and the causes which led him to pledge it are removed. If all men were good, this would not be good advice, but since they are dishonest and do not keep faith with you, you, in return, need not keep faith with them.... It is necessary ... to put a good color on this nature and to be skillful in simulating and dissembling."

Calvin's teaching about sensible signs of predestination to heaven or to hell (as he held), the rising bourgeoisie concluded that wealth is the principle of the common good adequately conceived. Seventeenth-century France was the scene of a false refinement of the Calvinistic teaching about the common good. With the establishment of Versailles and the concomitant forced concentration of the French nobility at the court of Louis XIV, the peasants lost the care of the nobility and eventually of the well-educated clergy.

The attempt to justify this new state of affairs lay in an application of Spinoza's denial of the distinction between substance and accident. Since, according to Spinoza, there is no distinction between substance and accident, there is no distinction between metaphysical personality and psychological personality. Moreover, as the seventeenth-century Spinozan concluded by a necessary logical consequence, there is no such thing as predicamental relation, and thus there is no initial analogate for recognizing transcendental relation and its distinction from predicamental relation. Since there is, then, neither predicamental nor transcendental relationship, the human person cannot be ordered to anything outside himself; there is only a rational order of himself to himself; the human person becomes utterly incommunicable. The common good, then, can be only the accidental union of many rugged individualists or the accidental union of many individual things; and, conceived in this way, the common good must be inferior to the "private" good.[2]

Since the concept of the common good was reduced to the concept of mere accidental union of many substances, human personality was taken to be the formal and final principle of the common good. Society, conceived as the mere accidental union of many persons, was reduced to a mere financial advantage of the wealthy. Upon the denial of a true social common good, there followed the denial of the material common good.[3] The spiritual and corporal education of the peasant was reduced to admiration towards those who were in the good graces of the French Monarch.

[2] The denial of predicamental relation was applied in practice in two outstanding ways. The abstract, impersonal article was substituted for the appellation indicating family relationship. Thus, for example, the violinists Forqueray, father and son, were referred to as "*the* (*la*) Forqueray"; the two Cupis (also father and son) were called "*the* (*la*) Cupis"; one spoke of Marin Marais, the composer, as "*the* (*la*) Marais"; Rameau's patroness, Mme. Pouplinière, was called "*the* (*la*) Pouplinière" (Cf. J. P. Rameau, *Six Concerts en sextour*; explanatory notes by David Hall, Vox recording DL-6680). The second outstanding indication of this practice was the use of the expression "Roi-Soleil" ("Sun-King") in reference to Louis XIV, for in this, the expression was considered to be *substantially identical* with King Louis.

To understand Spinoza's influence in the French court, we must remember that Spinoza only drew out the logical implications of Descartes' system.

[3] The denial of the material common good has been commonly summarized in the statement of Marie Antoinette: "Let them eat cake." "Cake" in 1789 did not signify the rich ingredients of modern cake; rather it was inferior in quality to black bread. Thus for the French peasant Marie's statement was an indication of her utter disregard for their plight.

While the Liberals preached the material common good, they practiced selfishness. Even the beautifying of the European city redounded to Liberal selfishness; the lot of the slum dweller was not improved. Thus the French Revolution served only to substitute the heads of the French Republic or the French Empire for the French Monarch. And because France was the model for the other governments on the continent, the notion that personality is the principle of the common good became entrenched in the European mind. That is why even the present Communist régimes use the notion long established in the European mind by making the head of the Kremlin appear to be eternal.

Indeed, the success of the Communist revolt in the Rhineland and the growing success of Bismarck's plan for hellenizing Germany aroused the minds of the German Bishops to consider this fundamental error in the then prevalent political thought. That is why the resistance to the *Kulturkampf* is a noteworthy landmark in the modern attempts to restore the traditional concept of the common good. In view of the fact that the Church leans heavily upon the teaching of her Doctors, we do well to summarize this teaching as synthesized by St. Thomas Aquinas.

Emphasizing the traditional doctrine about the common good, the Angelic Doctor states that goodness has the nature of an end.[4] Since this is true, goodness must be adequately conceived as end is adequately conceived; both must be grasped as analogous terms. Indeed, in the order of causality, good is more common than being;[5] and although being and non-being are immediately opposed, there is no such immediacy in the opposition between goodness and evil as known in common.[6]

However, the analogous conception of the common good presupposes that there is a hierarchy of common goods. Nowhere in his works does St. Thomas give a complete schema of the common goods contained in this hierarchy. Nevertheless, this hierarchy can be established in our minds through an apt consideration of the various texts which mention the various common goods, and even more so by due examination of the very order in which the Angelic Doctor deals with the adequate concept of goodness in his *Summa Theologiae*.

After treating of goodness in general,[7] he examines God's goodness, because, as a theologian, he must start with the goodness of Him to whom goodness is attributed as to a principal analogate. His next statement having a bearing on our study concerns the truth that creatures are made in conformity with God, the Supreme Model. That is why, although the universe could be better by way of accidental goodness, it could not be essentially better.[8] Indeed, because of this order of conformity, "the greatest good in creatures is the goodness which consists in the order of

[4] St. Thomas Aquinas, *Contra Gent.* I, chap. 38, ad lum.

[5] *Summa Theol.* Ia, q. 5, a. 2, ad 2um; *Contra Gent.* III, chap. 20.

[6] *De Malo*, q. 2, a. 5, ad 1um, ad 2um, ad 9um.

[7] *Summa Theol.* Ia, p. 6.

[8] *Ibid.*, q. 25, a. 6.

the universe."[9] However, since the creature is only an imitation of God (either as an image, or as a vestige),[10] "every created good is less than man's objective good," namely, God, "but not less than man's intrinsic and inherent good";[11] man's intrinsic and inherent good is created.

Since the concept of "common good" is analogous, embracing as it does a hierarchy of goods in their order to God, so the concept of "proper good" must be analogous: "Whoever seeks the common good, seeks his own good, since there cannot be a proper good without the common good, and the good disposition of the part is in respect to the whole."[12] In other words, it is impossible that there be a proper good not ordered to the common good. And yet, since both the adequate concept of the common good and the adequate concept of the proper good are analogous, there must be a correspondence between the proper good and the common good to which it is proximately ordered. There must be various orders of common and proper goods. We may generally designate these orders of goods as the order of spiritual goods and the order of material goods. The virtues are in the order of spiritual goods; they are proximately ordered to God either directly or indirectly. The natural virtues are ordered to the natural contemplation of the First Cause Uncaused, the supernatural virtues to the supernatural contemplation of God as He is in Himself. That is why man's principal spiritual good consists in interior acts;[13] or, viewed from the aspect of the object to which this spiritual good is ordered, "man's good consists in his union with God."[14]

There is a correspondence also between the material common good and the material proper good; both are aptly subdivided into bodily health and exterior goods. Under one aspect, bodily health is a common good; under another, a proper good. It is a common good inasmuch as the good functioning of society demands it; it is proper inasmuch as the exercise of fortitude and temperance demands it. Proper exterior goods are ordinarily designated as "private goods."

Before going on to examine Aristotle's analysis of the common good, we may well put St. Thomas' contributions into the following schema:

[9] *Ibid.*, q. 22, a. 4c; q. 25, a. 6, ad 3um; q. 47, a. 2c.

[10] *Ibid.*, q. 25, a. 7; q. 93, a. 6; IIa IIae, q. 25, a. 3, ad 2um.

[11] *Ibid.*, Ia IIae, q. 2, a. 8, ad 3um.

[12] *Ibid.*, IIa IIae, q. 47, a. 10, ad 2um; q. 61, a. 1, ad 3um. The analogy directly involved in the adequate concept of the common good is the analogy of proper proportionality, presupposing, as this does, the analogy of "more and less" which culminate in God as being the common good by way of a principal analogate.

[13] *Ibid.*, q. 27, a. 6, ad 3um; q. 30, a. 4.

[14] *Ibid.*, Ia IIae, q. 98, a. 5, ad 2um; IIa IIae, q. 27, a. 6, ad 3um; q. 30, a. 4; q. 166, a. 1c.

Hierarchy of Goods

Common Goods	*Proportionate Proper Goods*
God	Beatific Vision, Charity, Gifts, Fruits, Beatitudes
Church: Triumphant	All above-mentioned, as well as Heavenly Qualities of the Human Body
Suffering and Militant	Theological and Moral Virtues, Gifts, Fruits, Beatitudes; Material Properties of the Church (e.g. Basilicas, Monasteries)
Natural Society: State	Intellectual and Moral Virtues, especially in the Philosopher and in the Heads of Civic Government; Common Material Goods (e.g. Public Hospitals, Public Parks, Government Buildings, Museums, Public Libraries)[15]
Family	Intellectual and Moral Virtues, especially in the Head of the Household; Family Property (e.g. land, house, furniture, the clothing of the children).

Since there is a distinction among both common and proper goods, the good of an inferior order can be ordered to a good of a superior order, but not vice versa. In other words, while individual virtue, for example, can be ordered to the common spiritual good, this individual virtue cannot be ordered to the common material good as to its connatural term. A citizen should be led to a greater temperance than the mere exercise of sobriety demanded, for example, in connection with the construction of buildings in a public park. Civil government is not permitted to force a citizen to work to such a point of tension that he would need heroic virtue to resist the temptations to drunkenness or to other sins of intemperance as to the most apparent means of ridding himself of nervous tension.

So far we have examined the distinction between common good and proper good only in a very general context. We have not seen how these goods may be called "rights." To do this, we must examine the context of the social virtue, the virtue of justice. Our context, of course, is Aristotle's *Politics*.[16] Having established in the Tenth Book of the *Ethics to*

[15] In order not to make the schema too complicated for our context, we have decided to place the common material goods after the proper spiritual goods—with the connotation that the former goods (common material goods) are ordered to the latter (proper spiritual goods). The same procedure has been followed in the parts of the schema dealing with the Church and the Family.

[16] Plato's dialectical treatises on the common good (notably in *The Republic* and *The Laws*) are in accord with the teaching of Aristotle and Aquinas. In these dialogues, Plato focusses the attention of his disciples upon justice as understood *metaphorically*, that is, inasmuch as every human virtue plays a part in making a man just (cf. St. Thomas Aquinas, *Summa Theol.* IIa IIae, q. 58, a. 6).

Nicomachus that man is ordered by nature to the contemplation of eternal truth, the Stagirite begins his treatise on the *Politics* by examining the prerequisites to the definition of the common good. First he notes that man is naturally inclined also to associate with other men, that is, to form human society. The *general* reason for this formation lies in individual man's lack of complete self-sufficiency. However, since this general reason does not explain the order of any society (including that social unit we call the "family"), the Stagirite goes on to indicate that the members of any society are of two general types. There is the *cosmopolitan,* the member of society who, while excelling in intellectual brilliance, yet lacks sufficient bodily strength to take care of all his material needs. Then there is the *servant,* the member of society who, while excelling in bodily strength, lacks sufficient rational discretion to live well, not only as regards speculative wisdom, but also as regards practical wisdom. Thus the cosmopolitan and the servant are mutually complementary in regard to human needs. The cosmopolitan's wisdom is not only the cosmopolitan's right; it is the right also of the servant. The same is true of the servant's bodily prowess. That is why the husband's wisdom is the right also of his wife and children; and the wife's activity is the right also of her husband and children.

The cosmopolitan is so called because, excelling in both speculative and practical wisdom, he is not prejudiced as regards his family, his native city, or his native country; he can be "at home" anywhere in the world. While he loves his own family more than any other family, while he prefers his native city to any other city, while he loves his fatherland more than any other country, he can get along anywhere in the world. Although there is a preponderance of intensive love for the circumstances of his birth and education, yet he has an objective evaluation of other circumstances. This objective appreciation is needed for his growth in regnative prudence, indirectly for his growth in political wisdom.

However, since the servant is inclined by the preponderance of his bodily strength to be prejudiced in many respects, he fails to be at home outside a very limited circle; the strength of his passions blinds his mind against objective evaluation of other circumstances. That is why servant transients always seek places which are very similar to locales in their native habitat—common hotels, taverns, and the like. That is why, too, no matter how strenuous the attempts of the cosmopolitan to raise the cultural level of the servant, the servant never attains the level proper to the cosmopolitan as cosmopolitan.

To grasp the true character of Aristotle's distinction between cosmopolitan and servant, we must remember that it is a *political* distinction, based, therefore, on all the truths of human psychology. Thus it is a distinction between *voluntary* cosmopolitancy and *voluntary* servitude, cosmopolitancy and servitude *proceeding from human nature,* not a question of cosmopolitancy or servitude imposed by circumstances, that is, by a dictator, inheritance, a state of war, or a change of financial status. Aristotle's distinction is "our own concept of the division of labor, whereby some will

specialize in mental labor, others in physical labor to produce the best possible life for all." [17]

Recalling the mutual share of wisdom and bodily prowess by the cosmopolitan and servant, we can discern Aristotle's concept of the common good. The concept is not univocal, that is, the phrase "common good" is not to be applied only to one level of goods. It must embrace the contemplation of eternal truth as the ultimate aim of society, and thus also speculative and practical wisdom. It must include the material needs of the body—food, clothing, shelter, books, automobiles, radios, and the like. Since these goods are on various levels of reality, the concept of the common good (or common right), adequately understood, must be analogous (analogical).

To understand the nature of the common good as analogously understood, we must review the notions of "use" and "possession." Univocally taken, "use" connotes a diminution of good in the object used. Thus we refer to told cars and refrigerators as "used cars," "used refrigerators," and the connotation is that the use thereof has involved deterioration. The reason for this diminution of good lies in the fact that material things are subject to corruption. Analogically understood, however, "use" does not involve deterioration in the object. Thus when we use a science, we do not diminish the good in the science or in the objects of the science. Indeed, the science becomes better establishd in our souls. The same is true of the theological and moral virtues.

The word "possession" is derived from the Sanscrit word, "potis" (in Latin, "patis"), meaning "lord, powerful, mighty" and the Latin word, "sedere," which means "to sit." Thus etymologically "possession" means "mighty sitting," an "occupation." [18] The term "possession," then, involves the notion of "a powerful hold" of a thing in a person, or of a person on a thing. But as regards supra-human realities, the spiritual thing is said to have a "powerful hold" on man; a man is said to be "possessed" by what is superior to him. We must remember this distinction of meaning in our examination of the common good.

In the case of private property, the person has a "powerful hold" on some material thing, as, for example, is the case of the clothing of an adult who does not have the solemn vow of poverty. As regards *material* common goods, no individual can claim that he has a "powerful hold," for example, on a public park or a public library. And yet the use of these things by various individuals entails the diminution of their goodness; the park benches, the library books and desks deteriorate with usage.

As regards spiritual goods, no individual man as man can claim a "powerful hold," although he may manifest that they have possession of him and he may decide when to use them. Thus Aristotle could not

[17] St. Thomas Aquinas, *On Aristotle's Love and Friendship (Nicomachean Ethics*, Books VIII-IX), translated by Pierre Conway, O.P., The Providence College Press, Providence, R. I., 1951, Appendix, § 22.

[18] Cf. *The White Latin Dictionary*, Chicago, Follett Publishing Co., 1938; Emilio Albertario, "Possesso", in *Enciclopedia italiana*, Rome, 1935, Vol. XXVIII.

lawfully prevent others from learning the sciences he discovered. And inasmuch as the music of Mozart, for example, is poetic argumentation, Mozart and his wife could not lawfully prevent others from the spiritual advantage of his music, although, inasmuch as his music was a source of necessary financial income to him, he could restrict the use of his music precisely as a source of income. Yet science as science and music as music are common spiritual goods; no individual can lawfully take possession of them.

However, common spiritual goods may be restricted by an individual having the care thereof lest they should be used for evil ends. The Pope, for example, restricts the use of the sacrament of Holy Orders, lest it should be applied to unworthy candidates. The head of a family may tell his children not to speak of his practical wisdom in public, lest some moron should spread a misinterpretation of this wisdom. Such restriction does not take away the "common" character of the good involved; it only insures the goodness.

The general superiority of the spiritual common good over the human person as such is evident from our ordinary manner of speaking. We never say, for example, that John Doe has taken possession of justice, although we do say that justice rules John Doe. Indeed, the notion of a superiority of the human person over the common spiritual good is so repugnant to us that, to describe John Rabbit's injustice we say, "John Rabbit has taken justice (or the law) into his own hands."

That we are speaking of a *common* spiritual good is evident from the fact that we do not individualize, for example, justice, either univocally or analogically understood. Thus we do not say, *"this* justice" or *"all* justice." We think of justice in common precisely because it is a common spiritual good, a common object in which many should share. We do not thereby deny that fact that the virtues which dispose us well to the common spiritual object adequately measuring justice are individuated by their union with the individual human soul. We emphasize the order of the soul to this common object.

The traditional teaching on the relation between the spiritual common good and the human person is indirectly manifested in our manner of referring to vices contrary to justice. When John Rabbit has become politically ambitious, we do not say, "John Rabbit has taken possession of political ambition." Rather we say, "John Rabbit is in the throes of political ambition," or "Political ambition has seized John Rabbit's soul"; and the implicit statement in our minds is "Political ambition has taken John Rabbit's soul away from justice." This tradition is frequently confirmed in Sacred Scripture.[19]

The real modern fault, then, lies in equating the common spiritual good with the material common good, conceptually reducing the former to the latter. Of course, this is not a peculiarly modern fault. St. Thomas himself found it necessary to emphasize the superiority of the proper

[19] For example, *Ps.* 5: 9; 16: 15; 17: 23; 18: 9; 27: 8; 50: 21; 102: 17; *Prov.* 8: 14; 10: 15; 2: 2; *Eccle.* 3: 16; *Luke* 1: 17; *Act.* 6: 8; I *Cor.* 8: 1; 14: 1; 16: 14; *Eph.* 1:8; *Tit.* 2: 4.

human good over the good directly attainable also by infra-human creatures; there were persons who could not analogize properly even during the thirteenth century. However, once we clearly recognize the superiority of the spiritual common good over the material, we find little difficulty in recognizing the order of the human person respectively to God and to the state.

God takes possession of the human person especially through grace. Thus St. Paul says that charity urges us[20] because God *preoccupies* our souls through charity. In heaven, of course, God will have *full occupation* (or possession) of our souls through the light of glory, which each man will have according to the measure of charity each has at the moment of death.[21] Thus the very order of heaven results as a common good wherein Christ will be manifestly "the first-born among many brethren."[22] Indeed, since Christ's eminence among the Saints is, analogously, the first in the intention of God's plan of creation and redemption, we may say that each of the predestined is ordered to that common good which is the Triumphant Church. The beatific vision itself is the greatest of the acts wherein the Saints are like Christ, the first-born.

The common spiritual good which *occupies* (possesses) us in the civic state is the regnative prudence of the civil legislator and its fruits. Since this regnative prudence is not absolute, but dependent upon the natural law and ultimately upon the eternal law,[23] the interests of the state *cannot fully occupy us*; we should still be *preoccupied* about (by) our order to God.[24] That is why we say that the human person is not fully ordered to the state; the full ordination is to God and to the Triumphant Church.

[20] "The charity of Christ urges us" (II *Cor.* 5: 14).

[21] Cf. *Jn.* 14: 2; St. Augustine, *In Ioann.*, tract. 57, super 14: 2 (PL 35, 1812); St. Thomas Aquinas, *Summa Theol.* Ia IIae, q. 5, a. 2; Suppl., q. 93, a. 2.

[22] "For whom he foreknew, he also predestinated to be made conformable to the image of his Son; that he might be the firstborn amongst many brethren" (*Rom.* 8: 29). Cf. also *Col.* 1: 15; 1: 18; *Apoc.* 1: 5.

[23] Cf. St. Thomas Aquinas, *Summa Theol.* Ia IIae, q. 95, aa. 2-3; IIa IIae, q. 47, aa. 1-2, 10-12; q. 50, aa. 1-3.

[24] Cf. St. Thomas Aquinas, *Opusc. de regimine principum*, Book I, chap. 14. When we say that the spiritual common good occupies (or preoccupies) man, we do not thereby deny human freedom. Indeed, it is only man's order to the spiritual common good which sufficiently explains his freedom. Man can be indifferent towards created goods precisely because none of these goods can truly occupy him, that is, they cannot fulfill the desire of the will for the infinite good. And thus a man is the more free as his will is more perfectly united with God, the greatest of the common goods. Indeed, because the proper good is ordered to the common good as to its end (St. Thomas Aquinas, *Summa Theol.* Ia IIae, q. 90, a. 3, ad 3um; a. 2, ad 2um; q. 83, a. 1, ad 5um), the common good is said to be "more godlike and better than the good of one man" (*Ibid.*, Ia, q. 108, a. 6; Ia IIae, q. 97, a. 4; q. 111, a. 5; q. 113, a. 9). That is why the man who is concerned about the various common goods according to their true hierarchical value becomes the more godlike; charity insures the recognition of the true hierarchical value of various goods, and thus also among various common goods (*Ibid.*, IIa IIae, qq. 26, 29-33, 34-43).

Having examined the adequate concept of the common good, we have a solid foundation for examining the nature of individual right. The basic notion of "right" is "that which is due to another according to some equality."[25] The "other" contained in this definition can be either a physical person or a moral person.[26] If it is a physical person, then the right is called an "individual" or "personal" right.

However, the order of justice is not merely an order to the human person; it is not merely an order arising from circumstances. To avoid this error, St. Thomas affords an adequate definition of justice, so that, analogically understood, "justice" embraces also the virtues of fortitude and temperance, as well as the theological virtues. Even univocally understood, "justice" embraces the virtue of religion. Thus, even in the limited, univocal sense, the object of justice embraces far more than rights as defined in civil law.

On the broadest scale, we must admit that just as the adequate concept of justice is analogical,[27] so also the adequate concept of right. Right is the object of justice; and it is impossible that the adequate concept of a virtue be analogical if its object does not require analogous understanding on man's part. Thus, the most common of all goods, God Himself, is often referred to as to an individual right: "The Lord is the portion of my inheritance."[28] And within the broad scope of justice as understood metaphorically, any common good may be called an individual right, inasmuch as the individual can justly share in this common good.

The proper subject of a right, of course, is an intellectual being;[29] and among creatures, only angels and men have rights. Among men, there is a distinction of rights according to the distinction of foundations within individual men or distinct societies. Yet all men have the individual rights of the pursuit of eternal happiness (through growth in wisdom) and the concomitant freedom of choice, freedom from coaction, and continued bodily life; freedom from coaction and continued bodily life are lost only inasmuch as, through crime, an individual establishes himself against the common good, that is, the order of society to God either directly or indirectly.[30]

However, the pursuit of happiness itself is specified by the common good; God alone is man's objective aim. In other words, man's order to the common good is ultimately to the greatest of these common goods, God Himself.[31] As a result freedom of choice and freedom from coaction are at least indirectly specified by the common good. The same can be said of continued bodily life, since its purpose is to grant individual man

[25] St. Thomas Aquinas, *Summa Theol.* IIa IIae, q. 57, a. 1.

[26] *Ibid.*, a. 3.

[27] *Ibid.*, q. 58, aa. 5-8.

[28] *Ps.* 15:5; cf. also *Num.* 18: 20.

[29] St. Thomas Aquinas, *Summa Theol.* IIa IIae, q. 57, a. 2; q. 58, aa. 2-3; q. 60.

[30] *Ibid.*, q. 64, a. 2; q. 65, aa. 2-3.

[31] *Ibid.*, Ia IIae, q. 1, a. 8; *Opusc. de reg. princ., loc. cit.*

time for penance.[32] Precisely as goods, then, these individual rights are specified by and ordered to the common good. Indeed, no individual right escapes the order to the common good. Even private property has an order to common use when this is necessary.[33]

Let us examine the individual rights arising from the distinctions among men. By faith we know that no unbaptized person has the right of the Sacraments.[34] From our scrutiny of the distinction between the cosmopolitan and the servant, we know that the cosmopolitan's prudence, for example, is the servant's right and that the servant's labor is the cosmopolian's right. We can conclude that the cosmopolitan's job is directly his own right and that the servant's job is directly the right of the servant; oherwise each could not perform his proper function in society. That is why a cosmopolitan cannot justly demand the job of a servant except in extraordinary circumstances; neither can a servant demand, for example, that a political party establish him as the candidate for a public office. The cosmopolitan who would deprive the servant of the latter's proper occupation by taking his job from him acts unjustly. And the servant who insists upon a college education in spite of his low intelligence quotient cannot justly claim that a college education is his right.

From our analysis of the common good and individual right, we can see that while the examination of individual rights is necessary for an adequate concept of the common good, the common good itself is the aim and measure of individual rights. The common good never suppresses the individual right; rather the true common good defines and insures the individual right. Thus we cannot properly say that individual rights limit the common good, although we may say that the examination of individual rights puts a necessary restraint upon the mind of a man who is inclined to consider the common good only inadequately.

That this restraint has not always been exercized is well testified in the pages of history, and especially in our contemporary history. Laboring under the weight of the wounds of sin, many individuals have been blinded against the recognition and evaluation of individual rights, and they have, consequently, denied the true nature of the common good. The first widespread system of abject slavery was found in the kingdom which aimed at an earthly paradise; and the Babylonian system has been transferred to the modern countries dominated by the Communist régime. The only common good recognized is the material common good. Having reduced the concept of the common good to its initial analogate, the atheistic totalitarian logically refuses to recognize any individual rights, since for him everything must be sacrificed for the building up of the earthly paradise.

However, let us not point our finger too strongly to the Communist régime. We can find the denial of certain individual rights wherever we

[32] *Summa Theol.* IIa IIae, q. 64, a. 2, ad 2um; a. 5, ad 3um.

[33] *Ibid.*, q. 66, aa. 1-2.

[34] Eugene IV, *Decree for the Armenians*, Nov. 22, 1439; Council of Trent, Sess. VII, On Baptism, Can. 14; St. Thomas Aquinas, *Summa Theol.* IIIa, q. 63, a. 6.

find men still laboring under the wounds of sin. There we find also the denial of the adequate concept of the common good. Let us, then, humbly recognize our own shortcomings in this regard and help those who still do not appreciate that wonderful order from God wherein the wonderful variety of individual rights is ordered to the wonderful variety of His own Infinite Goodness.

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COMMENT ON FATHER LEHNER'S PAPER

You will note that the program for this session states that the comment will be "led" by me. I will endeavor to confine myself to this role. I do not, therefore, consider it necessary for me to give a resumé of Father Lehner's paper; neither do I think that, in case of disagreement with him, it will be necessary for me to develop my disagreement at length. I shall limit myself to underscoring the points in the paper, as well as in the subject itself, which I think may prove interesting topics for further discussion.

It would be less than just if I did not compliment Father Lehner on the research that has gone into his paper and especially the consistency with which he has developed his thesis. He has, furthermore, demonstrated in a masterly way the fact that in our discussion of the common good of civil society, we must conceive "common good" in its full and adequate meaning and not confine it to material goods which St. Thomas has always conceived as secondary and subsidiary.[1] Although as scholastic philosophers, we certainly know of this distinction, it is at times forgotten. Father Lehner has done a distinct service in emphasizing this truth.

Before going into detail, let me recall that, in the opening of his paper, Father Lehner has recognized "long-lasting disputes about the nature of the common good." As we know, roughly we can divide writers on this subject into two groups. One, insisting on the dignity of the human person, sees in society only a means for the perfection of the individual; the other, insisting on the essential social nature of man, considers the individual as a part of the collective whole to which he should be subordinate. The fact that both schools today appeal to St. Thomas in support of their positions should make us at least consider whether or not St. Thomas ever saw the problem in exactly the way that it has been presented in recent years. I doubt that he did—but that would be the topic for another paper.

Father Lehner has said that the disputes about the nature of the common good "have resulted from an inadequate analysis of its philosophical aspects," and it seems to me that the central point of the paper is the attempt to solve these disputes by a philosophical analysis of the notion

[1] *De Regno*, II, c. 4; cfr. also *Summa Theol.* Ia IIae, q. 4, a. 7.

of the common good drawn especially from St. Thomas. From a careful study of the paper and the sources designated by the author, it would seem to me that the attempt has not been entirely successful. For there seems to be a confusion throughout the paper between three notions, i.e. the "transcendental good," God, as the "supreme good" of all things and especially of man; and the "common good of civil society"; it is with this latter that this paper is principally concerned. I know that Father Lehner's solution depends upon analogy, but it seems to me at least, that he has shown analogy of "good," but not of "common good."

The strictly doctrinal part of the paper, as distinguished from the historical survey which I am passing over, begins with an analysis of the good. The analysis opens with the claim that, since according to St. Thomas, good has the nature of an aim, goodness must therefore be analogical because aim is analogical. Now in the passage cited by Father Lehner (*Contra Gent.* I, 36 ad 1), as also in *Summa Theol.*, Ia, q.5, a.4, where the same question is discussed, St. Thomas is not deducing the analogy of goodness from the final cause. As a matter of fact, he deduces the analogy of the good from the analogy of being in the same question of the *Summa Theol.*, i.e. q.5, a.3.

The paper goes on to state that "in the order of causality, good is more common than being." Now we must note that in the passages cited from St. Thomas in support of this position, he uses "non-being" with the connotation of "potential being" and he furthermore states that this is the position of Dionysius. Let me quote the relevant passage from *Contra Gent.* III, 20:

> This shows that the good *in a sense*[2] extends further than being: for which reason Dionysius says that "the good includes both existing and non-existing things." For even non-existing things (namely matter considered as subject to privation) seek a good, namely to exist. Hence it follows that matter is also good, for nothing but the good seeks the good.

But, I submit that for St. Thomas, this means that it *is* being and not non-being—else it could not be good.[3]

The author follows this by saying that "although being and non-being are immediately opposed, there is no such immediacy in the opposition between goodness and evil as known in common." And he cites for this several passages in *De Malo*, q.2, a.5. Now in this article and the answers to the objections which are cited, St. Thomas is not speaking of good and evil *simpliciter*, but rather of moral good and evil. The article deals with the possibility of an act morally indifferent with regard to its object. Evil *simpliciter* is non-being and therefore simply opposed to the good.

From this discussion of the transcendental good, it seems to me that the paper *supposes* as proved the analogical nature of the "common good of society," the "bonum humanum perfectum," and then goes on to discuss the hierarchy of "common goods." I would suggest that the texts referred to in this part of the paper show that there is a hierarchy of

[2] Italics mine.

[3] Cfr. *Summa Theol.* Ia, q. 5, a. 3.

"goods" (analogically considered), but they do not seem to have any direct reference to the "common good of civil society." Some of them do refer to God as the common good or ultimate end of the universe including non-rational beings.

Father Lehner now considers the question of the relation between the common good and the private good of the individual. Referring to *Summa Theol.* IIaIIae, q.47, a.10 ad 2, he says, "Whoever seeks the common good, seeks his own good, since there cannot be a proper good without the common good, and the good disposition of the part is in respect to the whole." From this reference he concludes: "In other words, it is *impossible*[4] that there be a proper good not ordered to the common good." I would like to quote the entire text of St. Thomas:

> He that seeks the good of the many seeks in consequence his own good for two reasons. First, because the individual good is impossible without the common good of the family, state or kingdom. Hence Valerius Maximus says of the ancient Romans that "they would rather be poor in a rich empire than rich in a poor empire." Secondly, because since man is a part of the home and the state, he must needs consider what is *good for him*[5] by being prudent about the good of the many. For the good disposition of parts depends on their relation to the whole; thus Augustine says that "any part which does not harmonize with its whole is offensive."

This text does not seem to justify Father Lehner's conclusion. True, there must be a correspondence between the private good and the common good to which it is ordered, but I submit that there are private goods which can be ordered to God directly while others are ordered to him indirectly through the common good. This, I would hold, is the mature doctrine of St. Thomas as set forth in the *Summa* and *De Regno.*

Since the paper now considers that all private goods are ordered to God only through the common good, the question of a conflict of rights vanishes. There can be no conflict of rights because all individual rights are subordinate to the common good. Father Lehner draws confirmation of his thesis from St. Thomas' discussion of the right of society to kill or mutilate a criminal.[6] But I submit that in these passages St. Thomas does not deduce a positive subordination of individual rights to the common good, but rather concludes negatively, that the use of individual rights may not harm the common good.

But the author goes even further and, referring to *Summa Theol.* IaIIae, q.1, a.8, states that the pursuit of happiness itself is specified by the common good. Once again the reference in St. Thomas is to God as man's Ultimate End. And Father Lehner concludes from this that "Precisely as goods, then, these individual rights (i.e. those necessary to attain the ultimate end) are specified by and ordered to the common good. Indeed, *no* individual rights escape the order to the common good." I would say that these individual rights are specified by and ordered to man's Ultimate End, God as the Supreme Good.

[4] Italics mine.

[5] Italics mine.

[6] Cfr. *Summa Theol.* IIa IIae, q. 64, a. 2; q. 65, aa. 2-3.

Now I would certainly agree with Father Lehner that the adequate concept of the common good of civil society does preclude any suppression of the individual person, but I would hold that the person possesses rights that can never be touched by the community and others that may be abridged only when the community is in actual peril.[7] In practice this does seem to mean that individual rights may at times limit the common good. This would appear to follow from St. Thomas' notion of society as an organism in an analogical sense. For both the individual and the family have a proper end independently of civil society. These ends imply the right to the means to these ends; and so the subordination of individual rights to the common good cannot be absolute. The unity of society is not a natural unity but a unity of order.[8] Where there is an operation of the part which is not the operation of the whole, there also is an end of the part which is not the end of the whole. The proper end of an individual is perfect happiness which, since he is a person, he should attain by his own operation.[9] Every good, therefore, which he has, even that which comes to him from civil society, should be ordered to that supreme end; although the perfection which comes to him from the right ordination should be ordered simply to the common good of civil society.

It seems to me that we cannot deny that there have been, are and will be conflicts between individual rights and the common good of civil society. The Church-State problem is an example of one that was known to St. Thomas, though it does not seem to have been a problem to him.[10] War produces many such conflicts. The soldier has a right to his life; the mother to the love of her son called to war. It is true that the adequate concept of the common good of civil society soon makes it apparent that many are only seeming conflicts and, it is true also, that many are resolved in favor of the common good, though even here the individual in some sense triumphs over the state inasmuch as he can use this apparent infringement of his individual right as a means to the Supreme Good. On the other hand, there are conflicts that at times cannot be resolved in favor of the common good, e.g. an innocent man cannot be killed even if, thereby, the common good of civil society would be aided. There were not a few cases of this kind during the Nazi occupation of France. Bannez discussed this question in his commentary on the *Summa Theol.* IIamIIae, q. 64,a.3. He wrote: "The hand and an innocent man are not to be considered under the same aspect. For there is the greatest difference because the hand is not existing naturally for itself but because of the whole. But man, from his very nature, is a whole immediately ordainable to the end of happiness. If, however, he does have the aspect of part, this is according to political association. Wherefore, as long as he is not deficient in this common and political communion, the state cannot directly deprive him

[7] Cfr. *Contra Gent.* III, 155; *Summa Theol.* Ia IIae, q. 95, a. 2; q. 96, a. 4; q. 97, a. 4 ad 3; IIa IIae, q. 66, a. 8.

[8] Cfr. I *Ethic.* Lect. I.

[9] Cfr. *Summa Theol.* Ia IIae, q. 2, a. 3.

[10] Cfr. *De Regno*, II, c. 3.

of life, even if the safety of the state would follow from his death; and hence it is that, although one can cut off a healthy and sound hand for the safety of the body, one cannot kill an innocent man for the safety of the state." It would seem that in a case such as this the individual right has limited the common good.

I will endeavor to sum up briefly. Father Lehner has recognized that there are disputes with regard to the nature of the common good. Certainly he would admit that in the concrete there are and have been definite conflicts between the rights of the individual and the common good of civil society. Father Lehner has, as it seems to me, resolved these conflicts by an analysis, not of the common good of civil society, but rather of the notion of transcendental good, under which all proper goods would be embraced. Let us not forget that, in relation to the transcendental good, the common good of civil society is a proper good. So it is difficult to see how the conflicts between two proper goods are resolved in the analogy of goodness. They can be resolved only by respecting the nature of each, i.e. by recognizing that there are times when the individual right must cede to the common good and that at other times the individual right may transcend the common good of civil society. In conclusion, we may say that even when the state violates the rights of a human person, the individual person still maintains its dignity and transcends the state. For it uses or at least can use the state as an instrument to achieve a moral perfection which it might not have arrived at in any other way.

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HISTORY OF PHILOSOPHY DIVISION: BERNARD MULLAHY, *Chairman.*

Grosseteste's Contribution to the History of Philosophy

I have been asked to give this paper on Robert Grosseteste. As you may know, the reason for it is the 700th centenary of Grosseteste's death on October 9, 1253. The special topic that has been assigned to me reads: "Grosseteste's Contribution to the History of Philosophy." We have only a very short time in which to accomplish this, but I do not think I can do so without reminding you of a few important facts concerning the life and work of Grosseteste. I do not think I will be wasting your time or mine in doing so. We are here in the "History of Philosophy Section," but I doubt very much whether you are all specialists of mediaeval philosophy. I suppose some among you have specialized more in ancient or in modern philosophy. And even among people who have specialized in mediaeval philosophy, since Grosseteste may not be an author of first importance, he may not be very well known, perhaps not as well as he should be.

Robert Grosseteste was born in Suffolk, England, about 1170. His biography is far from being well known. That is especially true of his life

before he became bishop of Lincoln in 1235. Many statements concerning his life are little more than hypotheses. We know little about his studies. Did he follow courses at the University of Paris? It is not certain. But he had a life-long connexion with the University of Oxford, where he studied and later taught.

Although he was a secular priest, he was the founder and first teacher of the Franciscan School at the University of Oxford. In this way he exerted a considerable and lasting influence on the University of Oxford, on the Franciscan School within it, and also outside. We must mention especially Roger Bacon, who is so interesting in theology, in philosophy and the sciences, Thomas of York, whose important "Sapientiale" is now being edited by the Pontifical Institute of Mediaeval Studies, Toronto, Canada. John Duns Scotus, and later, William of Ockham.

I think it can be said without exaggeration and without fear of any founded contradiction that in Western Europe, at least until the beginning of the modern period with Descartes and Francis Bacon, philosophy was mostly a development of Greek thought. But the strange and sad part of that story is that the mediaeval authors ignored almost completely the Greek language. Among all their Greek sources they could not know some of the most important, Plotinus and Plato. And even those they knew, due to their ignorance of Greek, they could reach only in and through Latin translations that were very often deficient. This is especially true until the middle of the 13th century. In that world Robert Grosseteste was a very rare and remarkable exception. He learned Greek thoroughly, and translated into Latin many Greek works. The list is too long to quote all of them here, but we cannot neglect the most important. He made revised, corrected translations of the works of Pseudo-Dionysius and commented upon them. I insist on "revised." All these works had already been translated before. He did the same with the "De Fide Orthodoxa" of St. John Damascene. And in this way he contributed to a better knowledge and to the diffusion of Greek thought, or the Greek truth, Graeca veritas, to quote St. Jerome.

But his main contribution in this field is the first complete translation of Aristotle's Nichomachean Ethics, around 1240, along with the commentaries of Eustratius of Nicaea and Michael of Ephesus (12th century). This translation brought for the first time the whole of the Nichomachean Ethics along with explanatory commentaries to the knowledge of St. Albert the Great and St. Thomas Aquinas. It is one of the main foundations of the moral philosophy and theology of St. Thomas Aquinas. One can see that, without Grosseteste, we might not have the I^a II^{ae} and the II^a II^{ae}.

Although he knew Aristotle very well, used him much and commented upon several of his works, the neo-Platonic influence in his system is the greater, especially the doctrines of St. Augustine and of Pseudo-Dionysius.

Grosseteste was a very gifted personality in many fields: he was a translator and commentator of Greek works. He occupies a very distinguished place in the history of natural science, which he explained by

mathematics. This seemed new in his own days, and attracted the admiration of Roger Bacon. He was a theologian and one of the most prominent figures in the Church in England. He exerted a great influence for a long time. And in the mediaeval works that followed him, so many of which are still unpublished, in the manuscripts, one finds him very often quoted: Dominus Robertus Lincolniensis.

He was also a philosopher. It would be useless to repeat here the numerous philosophical doctrines which he shared with so many of his contemporaries. Miss Beatrice Zedler is going to speak after me on "The Unity of Man according to Grosseteste." Therefore I will examine here briefly only his philosophy or metaphysics of light, lux. According to Grosseteste, everything is light, lux. God is the light par excellence, and all other beings participate in light. This is true not only of spiritual beings but also of natural beings. Even the first form of any material body, the forma corporeitatis, is light. Light gives to any material being all its perfection, its activity, color, beauty. When one studies ancient philosophers, Greek, Arabs like Al Kindi or mediaeval, as in this case, one finds a surprising similarity with some of the most up-to-date doctrines in science. The doctrine of Grosseteste we have just seen reminds one of the ideas of Einstein and the wave mechanics of de Broglie on the equivalence between matter and energy, "Matter and Light." According to Grosseteste human knowledge is also like light and it is in God's light that we see the truth of things. In lumine tuo videbimus lumen. This metaphysics of light is entirely neo-Platonic and anyone who knows the history of philosophy will recognize in it a great influence of St. Augustine. One finds similar thought in other authors who were influenced by neo-Platonism. To quote only one name: Ulrich of Strasbourg, O.P. (1262-1272).

Well my time is up. I am very happy to have been able to pay this homage to Robert Grosseteste. If he does not belong with the greatest of the 13th century, like St. Thomas, St. Bonaventure and St. Albert, he nevertheless exerted an important influence on philosophy. Without him, the greatest might not have been so great. Therefore, he should be studied more than he has been so far, especially by Catholics.

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COMMENT ON DOM POUILLON'S PAPER: ROBERT GROSSETESTE AND THE UNITY OF MAN

Dom Pouillon's paper has presented to us the reasons for commemorating the 700th anniversary of Robert Grosseteste's death. From this interesting survey, we can see why it is that scholars have pointed to the Bishop of Lincoln as a dominant figure in early thirteenth century thought.[1]

[1] Cf. D. E. Sharp, *Franciscan Philosophy at Oxford* (London: Oxford University Press, Humphrey Milford, 1930), pp. 9-10; J. Russell, "Phases of Grosseteste's Intellectual Life," *Harvard Theological Review*, XLIII (January, 1950), p. 93; D. A. Callus, O.P., "The Oxford Career of Robert Grosseteste," *Oxoniense*, X (1945), p. 44.

We have become aware of many aspects of Grosseteste's work: his work as an educator, as a translator,[2] as a scientist, theologian, and philosopher. Now that our interest has been aroused, we may wish to explore further some of the paths which have opened up before us. Within the limited time at our disposal, we shall try to examine more fully one aspect of Grosseteste's philosophy: his view on the unity of man.

Three works which at first might seem helpful for a study of Grosseteste's psychology, we shall have to refrain from using. The *De Homine* is regarded as a spurious work;[3] the *De Homine Creato,* a doubtful work;[4] and the *De Anima,* though thought by one writer to have been an early work of Grosseteste, has been a center of controversy and is still regarded as of doubtful authenticity.[5] We shall base our study only on works of

We may begin by asking: for Grosseteste, what is man? His answer seems quite clear:

"Man is a mortal rational animal."[6]

[2] We have seen in particular the importance of his work on the *Nicomachean Ethics.* Some doubt has existed as to whether Grosseteste could be considered the actual translator of the *Nicomachean Ethics,* but that doubt has now been removed. Cf. H. Rashdall, *Universities of Europe in the Middle Ages* (Oxford: Clarendon Press, 1936, new ed. by F. M. Powicke and A. B. Emden), vol. III, p. 240 and note; Ludwig Baur, *Die Philosophischen Werke des Robert Grosseteste, Bischofs von Lincoln* in *Beiträge zur Geschichte der Philosophie des Mittelalters,* Band IX (Münster, 1912), pp. 24*-29*; D. A. Callus, *op. cit.,* pp. 58-59, and "Introduction of Aristotelian Learning to Oxford," *Proceedings of the British Academy,* XXIX (1943), p. 253; A. Pelzer, "Les versions latines des ouvrages de Morale conservés sous le nom d'Aristote en usage au XIII^e siècle," *Revue Néoscolastique de Philosophie,* XXIII (1921), pp. 378-412; F. M. Powicke, "Robert Grosseteste on the Nicomachean Ethics," *Proceedings of the British Academy,* XVI (1930), pp. 85-104; S. H. Thomson, "The 'Notule' of Grosseteste on the Nicomachean Ethics," *Proceedings of the British Academy,* XIX (1933), pp. 196-218; and "A Note on Grosseteste's Work of Translation," *Journal of Theological Studies,* XXXIV (1933), pp. 48-52; and *The Writings of Robert Grosseteste* (Cambridge: University Press, 1940), pp. 65-66, 68-70, 85-86.

[3] Cf. Thomson, *The Writings of Robert Grosseteste,* p. 251.

[4] *Ibid.,* pp. 237-238.

[5] *Ibid.,* pp. 89-90. Thomson regards this as an authentic, though very early, work by Grosseteste. Cf. also Thomson, "The *De Anima* of Robert Grosseteste," *New Scholasticism,* VII (1933), pp. 201-221. Thomson's position in this article differed from that of Baur, *op. cit.,* pp. 113*-120*, and was questioned by Leo Keeler, S.J., "The Dependence of R. Grosseteste's *De Anima* on the *Summa* of Philip the Chancellor," *New Scholasticism,* XI (1937), pp. 197-219. Father Keeler suggests that the *De Anima* is Grosseteste's *reportatio* of lectures which Philip the Chancellor delivered at the University of Paris, but Dom Pouillon finds the reason for this view unconvincing: cf. *Bulletin de Théologie Ancienne et Médiaevale,* III (October, 1937), pp. 167-168.
unquestioned authenticity.

[6] *In Aristotelis Posteriorum Analyticorum Libros,* II, c. 2, fol. 30 vb (Venetiis, 1537): ". . . animal rationale mortale est diffinitio hominis . . . . . homo est animal rationale mortale." (I am indebted to the Rev. J. R. O'Donnell, C.S.B., of the Pontifical Institute of Mediaeval Studies, Toronto, for the use of the photostat copy of the 1537 edition. Father O'Donnell is preparing a critical edition of this commentary.)

". . . a true man is an animal that is composed of body and rational soul." [7]

These definitions might seem to be stating concisely a hylemorphic view of man. To see whether they do so in fact, we must look at the metaphysical context in which they occur.

Matter, for Grosseteste, while passive, is not pure potency. It is a simple substance, possessing a certain semi-reality.[8] Form, considered as a natural correlative of matter, is that by which a thing is what it is.[9] Since form has as its function to complete, perfect, and actualize matter, it is not merely the perfection of the thing in a static sense, but it has a dynamic aspect as well: it is an intrinsic principle of activity. It is called by Grosseteste the first corporeal form or form of corporeity and identified with light, *lux*.[10]

Both the form of corporeity and primordial matter are simple substances lacking dimension; yet the extension of matter in three dimensions is a necessary concomitant of corporeity. The only way that a simple substance without dimension like form, could introduce dimension into another simple substance without dimension like matter, was by multiplying itself and diffusing itself at once in every direction. Since form cannot desert matter and matter cannot be deprived of form, form extended matter as it diffused. Thus the union of first form and primordial matter gave rise to the extended material universe. The precise way in which this occurred, is described in detail in Grosseteste's *De Luce*.[11]

Since the first form is light, it can be said that "all things are one from the perfection of one light," for all bodies possess a primordial matter that has acquired the form of corporeity. This is a prerequisite for the reception of those further forms that give to bodies their specific differences.[12]

These further forms that bodies receive include material forms; immaterial forms of plants and animals; and such immaterial forms as

[7] *De Veritate*, in Baur, *op. cit.*, p. 135, line 28. An English translation of this treatise is included in R. McKeon, *Selections from Medieval Philosophers* (New York: Scribner's, 1920), vol. I, pp. 263-281. On the nature of man, cf. also Thomson, *The Writings of Robert Grosseteste, Dicta* (collected and arranged by Grosseteste from sermons and lectures), p. 230, # 132.

[8] *De Luce seu de Inchoatione Formarum*, in Baur, *op. cit.*, p. 51, lines 15-16. (References to Baur will hereafter be given thus: 51: 15-16). For English translation, cf. Clare C. Riedl, *Robert Grosseteste on Light: Translation from the Latin with an Introduction*, p. 10; cf. introduction, pp. 3-5. Cf. also *De Motu Corporali et Luce*, Baur, 90: 15-16; and *De Statu Causarum*, Baur, 126: 10-14: Grosseteste distinguishes here between *materia ex qua* and *materia in qua*; it is the former that corresponds to primordial matter.

[9] *De Statu Causarum*, Baur, 124: 24-25. Form may also be used in the sense of "exemplar", but that is not its meaning in this application. Cf. also *De Unica Forma Omnium*, Baur, 108: 14.

[10] *De Luce*, Baur, 52: 15-16: "Lux est ergo prima forma corporalis".

[11] *Ibid.*, 51: 13-52. Cf. also *De Motu Corporali et Luce*, Baur, 90: 8-10.

[12] *De Luce*, Baur, 57: 1-8.

intellective souls. In his *De Statu Causarum*, Grosseteste describes these forms in this way: the term *form*, he suggests, can designate an impression which is wholly material. This type of form, for instance, the forms of the elements and of mineral bodies, has a material cause that is "situalis," i.e. subject to location. Moreover, this form informs a whole, each part of which is of the same species and name as the whole.[13] What he seems to mean is that, for example, every drop of water is water and is called by that name.

Besides these material forms, there is also another kind of form, the soul. This form is "non-situalis," i.e. not subject to location; it is not parcelled out among different locations in the parts of matter. But there are two types of forms which are *non-situales*: the first type, the vegetative or sensitive soul, is educed from potency to act by means of a celestial power which is *situalis* and therefore this type of form can be hindered by forms that are subject to location (*formae situales*). In things informed by the first type of non-situal form, a part is not said to be of the same species as the whole, but it is of the same operation. What Grosseteste means here is that no part of a plant is a whole plant and no part of an animal is a whole animal; but since operation is coextensive with the whole body, every part of a plant vegetates and every part of an animal feels.[14]

The second type of soul or of *forma non-situalis* is the intellective soul. Because it comes directly to the vegetative and sensitive soul, it must not be educed into being directly from a substantial form, but directly from a *forma non-situalis*, namely the First Form (or God). In things informed by the intellective soul, a part is not of the same species as the whole nor of the same operation. By this Grosseteste means that no part of a man is the man, and not every and any part of man understands. Besides, the diversity of operations and perfections makes intellective soul the highest of natural forms.[15]

From these comments on form, let us see what meaning emerges for the nature of man. As an extended being, the human body receives its first perfection from light, the form of corporeity; besides, it is also the subject of further determination by the forms of the four elements. It was of this that Grosseteste was thinking when he wrote that man is a lesser world. Man's body, he explained, is divided into four elements:

> For it has in itself some fire, some air, some water, some earth. The element of earth is in the flesh; of water, in the blood; of air, in the breath; of fire, in vital warmth.—Indeed, the four-fold division of the human body signifies the four kinds of elements. For the head refers to the sky; in which there are two eyes just like the lights of the sun and moon. The chest is related to the air, because, just as the

[13] *De Statu Causarum*, Baur, 124: 29-33.

[14] *Ibid.*, 124: 34—125: 6. On this passage cf. also Sharp, *op. cit.*, p. 27.

[15] *De Statu Causarum*, Baur, 125: 6-15. The reference to the "first form" here is a reference to God; cf. *De Unica Forma Omnium*, Baur, 106: 16: "Deus est prima forma et forma omnium."

> breath of the nostrils is sent forth from there, so the spirit of winds (is sent forth) from the air. The abdomen, moreover, is likened to the sea because of the collection of all the humors just like the assembling of waters. Finally the soles of the feet may be compared to the boundary of earth. For the extremities of the limbs are dry or parched: like the earth.[16]

Besides these *formae non-situales* (i.e. the form of corporeity and the forms of the elements), man has a vegetative and sensitive soul. Then, Grosseteste seems to say, in addition to these forms, man has an intellective soul. It would be difficult to see what other meaning could arise from those passages in the *De Statu Causarum* that we have considered. It might perhaps be suggested that Grosseteste is merely trying to describe a hierarchy of forms in the universe without intending to say that all these forms are possessed in their multiplicity and distinctness by man. Yet he speaks of the intellective soul as "coming upon" those forms that he has already mentioned ("superveniens his de quibus iam dictum est") and as "directly coming to" the vegetative and sensitive soul which he implies is a substantial form ("quia immediate advenit formae non situali, necesse fuit, ut non educeretur in esse immediate a forma substantiali, sed immediate a forma non situali, scilicet prima").[17]

This does not seem to be a view in which the lower forms are subsumed by, or are virtually existent in, the highest form, the intellective soul. The intellective soul does not function as the substantial form of man nor is it the act of any body.[18] Thus Grosseteste appears to be teaching a doctrine of the plurality of forms in man.[19]

If in his metaphysical structure, man is only a juxtaposition of distinct and separate forms, he seems to lack a *per se* unity. Man's parts do not seem to exist by one act of existing. Yet Grosseteste speaks of the soul as being closely bound to the body and as having a close relationship with it because of this union.[20]

What is the nature of this close bond between body and soul? The intellective soul, says Grosseteste, is wholly present to the body as God

[16] "Quod Homo Sit Minor Mundus", Baur, 59. Translation quoted is by Sister M. Patricia, R.S.M., *On the Intelligences and Several Other Writings by Robert Gosseteste* (Milwaukee: Marquette University Library, 1937, in typed form), p. 14.

[17] Baur, 125: 6-10.

[18] *In Post. Anal.* I, c. 14, fol. 17rb: "...pars suprema animae humanae quae voca(n)tur intelligentia...non est actus alicuius corporis..."

[19] Mrs. Riedl finds that there is a doctrine of plurality of forms in Grosseteste and points in particular to the *De Statu Causarum*; cf. introduction to her translation of the *De Luce*, p. 4.—Miss Sharp, *op. cit.*, p. 187, says that the theory does not appear "in its developed version until Pecham, under opposition from St. Thomas, was led to consider its implications," but she finds, p. 28, that Grosseteste suggests the theory of the plurality of forms and "possesses the rudiments of this theory, even if he does not consistently expound it."

[20] *De Intelligentiis*, Baur, 116: 31-34. Cf. English translation by Sister M. Patricia, *On the Intelligences and Several Other Writings by Robert Grosseteste*, p. 8.

is at the same time wholly present everywhere in the universe. The meaning of this comparison he clarifies by citing St. Ambrose as follows:

> Just as the one God is always wholly present everywhere, vivifying, moving, and directing all things, so the soul in its entirety acts everywhere in its own body, vitalizing, guiding, and moving it; for it is not greater in the larger members of the body and less in the smaller ones, but it is wholly present in the least and wholly in the greatest.

Grosseteste also agrees with St. Augustine that the soul is wholly present at the same moment in all parts of the body.[21]

Rejecting the opinion that the soul is in the heart alone or in the brain alone by its essence and elsewhere in the body by its power, Grosseteste holds that wherever the power of the soul is, there it is itself in its entirety. He says this to be consistent with his view that the soul is *non-situalis*, i.e. not subject to location, since it is purely incorporeal. He does note that "it is customary to say that soul is located in that part of the body where it exercises those corporeal activities that it uses in ruling the body," for example, in the heart or the brain. But by such expressions, he explains, "location is attributed to the soul not as belonging to the nature of the soul itself, but as the root of the corporeal motion which it causes." By itself soul is not subject to location nor is it bounded by any limits of place.[22]

The discussion of the soul's presence in the body suggests that for Grosseteste the soul is related to the body as a mover. The citation from Ambrose, for example, referred to the soul as vitalizing, guiding, and moving the body.[23] Grosseteste elaborates on this theme by saying, in his own words, that the soul is the mover and ruler and the form acting into the body: *motor et rector eius et agens in ipsum*.[24]

[21] *Ibid.*, Baur, 114: 8-23; Tr. by Sister Patricia, p. 4. St. Ambrose ref. is *De Dignitate Conditionis Humanae*, c. II (Migne, P.L. 17, 1105 B); St. Augustine, *Epistulae*, 166, c. 2 n. 4 ad Hieronymum (Migne, P.L. 33, 722) and *De Immortalitate Animae*, XVI, 25 (Migne, P.L. 32, 1034).

[22] *De Intelligentiis*, Baur, 114: 24—115: 23.

[23] This stress on soul as giving life to the body and being the source of its movements might raise the question as to whether it is really the intellective soul or the vegetative and sensitive soul that is being discussed in these lines. (Vide Sharp, *op. cit.*, p. 28). Is this discussion not inconsistent, for example, with the remark in the *Commentary on the Posterior Analytics*, I, c. 14, fol. 17 rb that the supreme part of the human soul which is called intelligence is not the act of some body?

In answering this question, these points should be noted: (a) Grosseteste is careful to say not that soul is act of body but *agens in ipsum*; (b) the whole explanation of how soul is joined to the body is designed to preserve the separateness and incorporeal nature of soul; (c) in this context no distinction is made between vegetative and intellective forms in man, and since much of the *De Intelligentiis* consists of a comparison and contrast between human souls and angels, it seems reasonable to suppose that Grosseteste means here the intellective soul. The precise way in which the vegetative and sensitive soul are related to the activities of intellective soul is not touched upon at all, as this was not Grosseteste's concern in this treatise.

[24] *De Intelligentiis*, Baur, 115: 36.

As a mover, the soul, though in no sense restricted to one place, begins in the heart the vital movements of body, and it begins in the brain the activities used in perceiving and in giving local motion to body.[25] But this does not mean that soul has direct contact with body. It is bound to the body through light: a body itself, yet so subtle a body that it resembles a spirit.[26] When it acts as a mover, soul functions as follows: soul by incorporeal affection moves light (or "corporeal spirits"); light then moves the nerves and the muscles; and they in turn move the grosser members of the body.[27]

This succession of seemingly transitive acts attempts to unite in the order of operation the forms that are separate in the order of essence. It leaves man an aggregate, though dynamic rather than static. What unity man has, is conferred by a single source, the intellective soul. As the chief mover in man, it alone initiates movement and so unites the composite by means of a one-way motion.

Even this tenuous unity of motion might seem to be challenged by certain facts, e.g. that soul seems to be moved *by* the body since it feels suffering and pleasure. Finding this hard to explain, Grosseteste comments as follows:

> In regard to this matter I should prefer humbly to listen rather than to be rash in defining anything.[28]

Though the full explanation momentarily eludes him, he is sure of the answer: soul cannot suffer from body. He insists on this principle: the less noble cannot act on the more noble; the corporeal cannot act on the incorporeal.[29] "The soul necessarily experiences pain when the body is too hot or when it becomes stiff with cold," he concedes, "and yet nothing corporeal acts upon the soul."[30] Soul suffers not as though *from* motions of the body but *to* motions of the body: *patiens AD motiones*, not *patiens A motionibus*.[31] Appealing to St. Augustine's authority, Grosseteste quotes him as saying:

> I do not think that the soul animates the body except with the intention of acting therein: nor do I think that the soul experiences anything from the body but that it acts for it and in it as in something divinely subjected to its authority; sometimes, however, it oper-

[25] *Ibid.*, 115: 15-20; 116: 5-8.

[26] *Ibid.*, 116: 20-23.

[27] *Ibid.*, 116: 17-30.

[28] *Ibid.*, 118: 24-26.

[29] *Ibid.*, 118: 36—119: 4. Cf. also *De Motu Corporali et Luce*, Baur, 91: 22-23. N. B. in *De Libero Arbitrio*, c. 11, Baur, 205: 22—206: 6, Grosseteste, during a discussion of the notion of fate, indicates that man's body can be moved by the stars and not just by its soul, but in case of any possible conflict, it is the soul's motion that takes precedence.

[30] *De Intelligentiis*, Baur, 119: 21-23.

[31] Dr. Lawrence Lynch very clearly brings this out in "The Doctrine of Divine Ideas and Illumination in Robert Grosseteste, Bishop of Lincoln," *Mediaeval Studies*, III (1941), p. 167. Cf. *De Intelligentiis*, Baur, 118-119.

> ates with ease and sometimes with difficulty according as the corporeal nature in proportion to its merits is more or less subjected to it. Corporeal things, therefore, and whatever things are forced upon this body or oppose it from without act not upon the soul but upon the body itself which either is opposed to or agrees with the activity of the soul.[32]

Soul is therefore not acted upon by body, but merely acts when body is acted upon. To illustrate his meaning Grosseteste says that a mirror when moved is the necessary occasion for the motion of the rays which the mirror reflects, and yet that mirror does not move the rays. The rays move themselves upon the occasion of the motion of the mirror. So the soul moves itself upon the occasion of the motion of the body.[33]

This view that the body's changes are only an occasional cause for soul's action has importance in the explanation of knowledge. Gosseteste's treatment of knowledge gives a further clue to his view of man's unity.

The discussion of how man knows involves two aspects: (1) how the soul *ought* to know; and (2) how the soul in fact *does* know. The intellective soul is not the act of the body and does not need any bodily instrument for its own operation. Without the help of sense, it should therefore have complete knowledge through illumination from a higher light. For there is a spiritual light which is to intelligible things as a corporeal light is to sensible things. A body cannot be seen to be colored in its color alone, without an external light shining upon it. Similarly, a thing cannot be known to be true in its created truth only, without the light of supreme truth shining upon it. In this spiritual light the Intelligences see all universal and singular things that can be known, and so should the human soul. But this occurs for only two groups: those that have laid the body aside; and, in this life, those who have been freed from the love and phantasms of corporeal things. For most men the purity of the soul's gaze is clouded and burdened with a corrupt body. Because all the soul's powers are busied with the mass of the body, the soul cannot act and so in a certain way is asleep.[34]

In fact, then, knowledge occurs in this way: through the many meetings of sense with sensibles in time, the reason is awakened and brought down to the sensibles in the senses as though in a ship. The awakened reason begins to divide and consider separately those things that were confused in sense: for example, sight had confused color, magnitude, figure, body, and in its judgment all were received as one. But the awakened reason divides color from magnitude and figure and body; and it separates figure and magnitude from body, and so through division and abstraction it arrives at a knowledge of the substance of body by putting aside magni-

[32] *De Intelligentiis*, Baur, 119: 5-13; St. Augustine, *De Musica*, VI, 5 n. 9 (Migne, P.L. 32, 1168).

[33] *De Intelligentiis*, Baur, 119: 21-26.

[34] *In Post. Anal.*, I, c. 14, fol. 17 rb (in 1537 ed.). The text referred to is quoted by E. Gilson from the 1521 Venice edition, in "Pourquoi Saint Thomas a Critiqué Saint Augustin," in *Archives d'histoire doctrinale et littéraire du moyen âge* (Paris: Vrin, 1926), I, p. 96, note 1. Cf. also Grosseteste, *De Veritate*, Baur, 137: 19—138: 23; and on the imperfection of the human mind, cf. *De Artibus Liberalibus*, Baur, 1: 1-9.

tude and figure and color. But the reason knows a universal as universal only after it has made its abstraction from many singulars and after it has judged that there is one and the same thing found in many singulars. And so if any sense is lacking, to any who have the eye of their mind occupied with the mass of the corrupt body, there will be a defect in the universal, too.[35]

Granted the present condition of man, the soul needs the senses to know. The repeated shock of sensations in body is the occasion needed for soul to move itself into act. But what gives rise to this need is a condition that Grosseteste regrets: the mingling of affection with knowledge, and especially the disordered affection of man. "For the reason asleep within us," he says, "acts only after it has been awakened through the operation of sense. But the reason why the gaze of the soul is clouded through the mass of corrupt body is that the affections (*affectus*) and insights (*aspectus*) of soul are not divided."[36]

When the love of the soul is turned towards the snares of the body, it drags with it the gaze of the mind and turns it aside from its own light: a light related to mind as the sun is related to the external eyes. But once the gaze of the mind is turned aside, it necessarily is turned towards darkness and sloth, until going out in some way through external senses into external sensible light, in some way it receives a vestige of the light that is native to it. And when as though aroused, it ascends to this, it begins to seek its proper light. As its love turns away from corruptible bodies, its gaze turns towards its own light. Then it finds itself again. And in finding itself, it finds God, since for man, to turn from the body to the light of his own soul is to turn to God,[37] "the first form and form of all things:" the exemplary cause and first light which illumines all else.[38]

What further clue to the view of man's unity is given to us in this doctrine of knowledge? Soul by its nature has no need of the body for its own perfection; but soul by its concrete condition has acquired a need of this kind. Granted the fact of the soul's wretched love for the body, union with body is needed for knowledge, at least temporarily. Having bound itself by love to what is corrupt, soul now must use these bonds so as to surmount them. But this temporary regrettable need for the body as the occasional cause of soul's action insures no intimate union of body and soul. An accidental union suffices.

[35] *In Post. Anal.*, I, c. 14, fol. 17rb—va; for citation of text cf. Gilson, *op. cit.*, pp. 96-97, note 1.—On the soul's need of the body and phantasms in knowing, cf. *De Statu Causarum*, Baur, 125: 4-16.

[36] *In Post. Anal.*, I, c. 14, fol. 17 va; Gilson, *op. cit.*, p. 97, note. Cf. also *De Libero Arbitrio*, Baur, 228: 4-16.

[37] *Ibid.* The implication of this passage might seem to be a doctrine of God as the agent intellect, but, as Gilson points out (*op. cit.*, p. 97) Grosseteste does not use the term, agent intellect, in stating his own position.

[38] *De Unica Forma Omnium*, Baur, 106-111. Such a turning to God is an anticipation of heaven, for in heaven we shall see all truth in God's light. Cf. H. R. Luard (ed.), *Roberti Grosseteste Episcopi Quondam Lincolniensis Epistolae* (London: Longman, Green, Longman, and Roberts, 1861), Epistola, VI, pp. 39-40.

The lack of a *per se* unity, supposed by the explanation of knowledge, we have also seen in the comments on man's operation and structure. In all operations, the soul without being the act *of* the body, conveys act *to* the body; it is the source of transitive rather than of immanent action. Man has one main source of his acts, but this gives him scarcely more unity than that of a machine which is put into act by one motor. In his metaphysical structure, too, man is many rather than one. He is composed of a number of forms: form of corporeity, forms of the elements, sensitive and vegetative soul, and to all these is added the intellective soul. Though the forms are arranged in a hierarchical series, man is no less an aggregate. Whether Grosseteste considers man's parts in their static or dynamic relation, his man still lacks a *per se* unity.

Another approach to man's unity is suggested in a *Hexaemeron* text. One can describe man in terms of his form and his species, but it is of greater importance to see him in relation to his final and exemplary cause.[39] Man is a vestige of God, for God's vestige is found in all creatures and especially in man. Man is made to the image and likeness of God.[40] Possessing memory, intellect, and love,[41] man is one image of the Triune God, representing in himself the Trinity of unity and the unity of the Trinity.[42] Man's true nature and true unity must therefore be sought in the intellective soul alone,[43] for it is there that we find the natural image of God which cannot be lost.[44] Man's likeness to God has, however, been

[39] *Hexaemeron*, Pars Septima, Capitulum Primum, p. 158, 11. 26-29 of Father J. T. Muckle's critical edition of "The Hexameron of Robert Grosseteste: The First Twelve Chapters of Part Seven," in *Mediaeval Studies*, VI (1944), pp. 151-174.—On God as exemplary cause, cf. *De Unica Forma Omnium*, Baur, 106-111.—To compare the position of Grosseteste with that of St. Augustine, cf. St. Augustine, *De Trinitate*, XV, 7. 11 (Migne, P.L. 42, 1065); *De Moribus Ecclesiae*, c. 4 & 5 (Migne, P.L. 32, 1313-1314); *De Civitate Dei*, XIII, 24. 2 (Migne, P.L. 41, 399-400).

[40] *Hexaemeron* (Muckle ed.), VII, c. 1, p. 157, 1. 1 ff.

[41] *Ibid.*, c. 5, p. 164, 11. 1-2; *De Libero Arbitrio*, Baur, 238: 7-11; *Dicta*, # 60, in Thomson, *The Writings of Robert Grosseteste*, p. 222; and *Hexaemeron*, fol. 167rb. (I am indebted to Dr. A. C. Pegis and to Rev. J. R. O'Donnell, C.S.B., for the loan of a photostatic copy of Hexaëmeron MS. Brit. Mus. Reg. 6 E.V.). Cf. St. Augustine, *De Trinitate*, XV, c. 6 & 7 (Migne, P.L. 42, 1063-1067).

[42] *Hexaemeron* (Muckle ed.), c. 10, p. 171, 11. 2-6.

[43] There is an interesting text in the controversial *De Anima* that is quite applicable here. Whether or not it be an authentic text of Grosseteste, it gives expression, without apology or hesitation, to a view in agreement with that of Grosseteste. The point made is this: if we compare the unity of the soul, of the body, and of the whole man, the greatest unity is in the soul, a lesser unity in the body, and the least unity is in man. Cf. Baur, 252: 10-20.—N. B. Keeler, *op. cit.*, p. 217, remarks: "Neither Baur nor Thomson have found anything in the *De anima* inconsistent with Grosseteste's utterances in his other works."

[44] *Hexaemeron* (Muckle ed.), c. 5, p. 164, 11. 1-15; c. 6, p. 166, 11. 26-28. N. B. the use of the term, *suprema facie racionis*. Father Muckle points out that this was no doubt suggested to Grosseteste by the doctrine of the *duae facies animae* of Avicenna; cf. *ibid.*, p. 154; p. 164, note 1.

damaged by sin; by turning from God to lower things, man has become a "deformed image."[45] But to the extent to which man, with God's grace, seeks to restore within himself his resemblance to God, he will become what God meant him to be:[46] not only the most perfect and precious of God's creatures[47] but the highest and closest likeness of God: *summa et propinquissima similitudo*.[48] As the divine likeness is renewed in the soul, the lower powers, too, are conformed to this likeness. Man becomes in his whole being, soul and body, the image of the Trinity.[49] Each faculty becomes expressive of God and directed to Him. As the *summa similitudo* God wants him to be, man thus achieves unity in ordering his life towards his exemplary cause and last end. But the unity thus described is a moral integrity rather than a metaphysical unity. Important though this be in the practical moral view of man, it does not in itself solve the metaphysical problems that were raised in the *De Statu Causarum*.

Yet to stop by saying that for Grosseteste man in the metaphysical order lacks a *per se* unity, would not be wholly just to him. If we consider both his comments on man and the background against which they are uttered, we see that there is a unity here not only for man but for all that exists, and that unity of all things is found in *lux*, or light. God, the exemplary form of all things, is the supreme uncreated light; what He created was a point composed of *materia prima* and the form of corporeity, light. This in turn was suddenly diffused so as to give rise, eventually to all else.[50] Intelligences or angels are created lights,[51] and this also seems to be true of the human intellective soul. Here where "all things are one by the perfection of one light,"[52] the antithesis of body and soul would seem to be overcome, for both are light.

If this be the true thought of Grosseteste, then unity is dearly bought. The stress on the distinctness of soul from body and on soul's superiority to body seems unconvincing. For body and soul then differ only by the degree of intensity or concentration of light. The spirituality that has been so cautiously safeguarded from a corruptible body is then destroyed. The total result: an inner contradiction in Grosseteste's thought.

[45] *Ibid.*, c. 6, p. 166, 11. 25-27; c. 7, p. 168, 1. 28. On possible sources (e.g., St. Bernard and others) of Grosseteste's doctrine of *imago*, cf. Muckle, pp. 155-156.

[46] *Ibid.*, c. 8, p. 169.

[47] *Ibid.*, c. 12, pp. 173-174.

[48] *Ibid.*, c. 7, p. 168, 11. 23-25.

[49] *Ibid.*, c. 5, pp. 164-165.

[50] *De Luce*, Baur, 51: 11; and *Hex.* fol. 147 vb (text is cited by Sharp, *op. cit.*, p. 19).

[51] *In Post. Anal.*, I, c. 7, fol. 8 ra (1537 ed.); in Gilson, *op. cit.*, p. 94. Cf. also *De Ordine Emanandi Causatorum a Deo*, Baur, 149: 10-14.

[52] *De Luce*, Baur, 57: 6. Cf. also Dom Pouillon's point that for Grosseteste it is light which gives to the universe its unity and its beauty: Dom Henri Pouillon, "La Beauté, propriété transcendentale, chez les Scolastiques (1220-1270)", in *Archives d'histoire doctrinale et littéraire du moyen âge* (Paris: Vrin, 1946), XV, p. 287 ff. and texts, pp. 319-323.

Then, too, the use of *lux* has important metaphysical consequences. True, Grosseteste tries to distinguish between corporeal and spiritual light, and between *lux* (source of light) and *lumen* (irradiated or reflected light),[53] but again it seems that these are distinctions more of degree than of kind. He is careful to distinguish God, supreme light, from the light He has created, but all things are light in a way which confuses metaphorical and literal meanings of *lux*. Light serves at once as the principle of unity and as the principle of difference, but the unity overshadows the differences. *Lux* is, after all, a kind of being, and all beings are held to be of this kind.[54] Here to-be means to-be-of-a-kind, namely light. In forcing a kind of being to play the role of being itself, this view scarcely avoids the dangers that any essentialist metaphysics encounters.

But to say, as one scholar does, that the Bishop was a better physicist than a metaphysician,[55] is not to detract from Grosseteste's position in early thirteenth century thought. Though some philosophical casualties may result from his fusion of metaphysics and optics, this curious blend served as a challenge to the men of his time. It is not without reason that an early biographer eulogized Grosseteste in this appropriate simile:

> Comparing the Bishop of Lincoln to all modern doctors is like comparing the sun to the moon when the moon is eclipsed.[56]

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[53] *De Luce*, Baur, 54: 31—55: 22; Riedl, *op. cit.*, pp. 5-6.

[54] God, too, is light, but Grosseteste wishes to avoid a univocal predication. Cf. *De Unica Forma Omnium*, Baur, 106: 16 and 109: 7-25; and *De Ordine Emanandi Causatorum a Deo*, Baur, 148: 31-32.—Grosseteste's doctrine of illumination suggests that of St. Augustine. For references to basic texts on Augustinian illumination, together with an interpretation of these texts, cf. E. Gilson, *Introduction à l'Étude de Saint Augustin* (Paris: Vrin, 1949), pp. 103-130. Among other influences on Grosseteste's light-metaphysics, the following have been suggested: *Book of Genesis*, St. Basil, Al-Bitrogi, *Liber de Causis*; cf. Riedl, *op. cit.*, pp. 5-8; Sharp, *op. cit.*, p. 22, note; Baur, *Die Philosophie des Robert Grosseteste* in *Beiträge zur Geschichte der Philosophie des Mittelalters*, Band, XVIII (Münster, 1917), pp. 76-80.

[55] Rashdall, *op. cit.*, p. 242. Cf. also R. Carton, *L'Expérience Mystique de L'Illumination Intérieure chez Roger Bacon* (Paris: Vrin, 1924), p. 310: "Robert Grosseteste ... ce physicien doublé d'un mystique ou ce mystique versé dans la physique...."

[56] J. Tyssington: "Lincolniensis, cuius comparatio ad omnes doctores modernos est velut comparatio solis ad lunam quando eclipsatur." In W. Shirley (ed.), *Fasciculi Zizaniorum Magistri Johannis Wyclif cum Tritico* (London: Longman, Green, Longman, and Roberts, 1858), p. 135. —Cf. also Bacon's words of praise: Roger Bacon, *Opus Tertium* in J. S. Brewer, *The "Opus Tertium" and "Opus Minus" of Roger Bacon* (London: Longman, Green, Longman and Roberts, 1859), p. 70: "... pauci sapientissimi fuerunt in perfectione philosophiae; ut primi compositores, et Salomon, et deinde Aristoteles pro tempore suo; et postea Avicenna, et in diebus nostris dominus Robertus episcopus nuper Lincolniensis..." *Ibid.*, p. 75: "Dominus vero Robertus episcopus Lincolniensis et frater Adam de Marisco, majores clerici de mundo, et perfecti in sapientia divina et humana...."

PHILOSOPHICAL PROBLEMS DIVISION: R. A. KOCOUREK, *Chairman*

Leaders: DAVID A. DILLON AND HENRI DULAC

The Nature of Christian Philosophy: A Panel Discussion

Dr. Kocourek: Instead of the usual procedure of presenting a paper and a commentary, the members of this panel will discuss the nature of Christian philosophy in the form of a dialogue. Fr. DuLac will present the problems and make objections, and Fr. Dillon will attempt to answer them. We do not think this procedure is the only possible way of treating this problem, but we think it might be an effective one. We hope that this method will result in a clearer understanding of the problems and in a more orderly presentation of the subject, as well as in a more interesting and stimulating panel. We invite participation by the audience, and we ask you only to put your problem in the form of a question or an objection. Fr. Dillon holds a doctorate in sacred theology and a license in philosophy from Laval University in Québec. Fr. DuLac holds a doctorate in philosophy and a license in sacred theology from the same university.

Fr. DuLac: Before we go into the problem we propose to discuss, I think we might well make an effort to justify bringing this matter up. To my knowledge, the problem of Christian philosophy has already been treated at considerable length. In fact, I believe the American Catholic Philosophical Association in its 1936 convention heard several papers on the subject. Is it not true that there has already been considerable discussion?

Fr. Dillon: Yes, this problem was discussed by Catholic philosophers especially during the 1930's. The occasion for the discussion at that time did not come from Catholic sources but from the French historian of philosophy, Emile Brehier. In his *Histoire de la Philosophie* and later (1931) in a lecture before the Société Française de philosophie he set forth the thesis that Christianity in its inception contributed no intellectual values functionally original or different from paganism, and that in its development it had little or no influence on the progress of philosophical thought. In a word, Christianity had never succeeded in establishing a Christian philosophy. The reason for the failure was not difficult to see. In the very elements to be united, Christianity ("the mysterious account of God's relations with man") and philosophy ("the clear and distinct knowledge of reason") there was, he said, an irreconcilable opposition. Accordingly, it is no more correct to speak of Christian philosophy than to speak of Christian mathematics or Christian chemistry.

It was inevitable that such a radical thesis written on a subject which Catholic philosophers were disposed to regard as their own should arouse an immediate and vigorous discussion. In the controversies which followed, M. Brehier was forgotten and Catholic philosophers directed their efforts to resolving the problem from principles of their own philosophy and defending their own positions. Besides the discussion by our own Association, the problem was taken up by the Société Thomiste in 1933, by

the Société Thomiste de l'Université d'Ottawa in 1933, and by the Second International Thomistic Congress in Rome in 1936.

However, the 1930's were not the first time that the problem of Christian philosophy was debated. Most of the theologians of the sixteenth and seventeenth centuries treated the problem, some of them at great length. This is true of the earlier ones such as Capreolus, Durandus, and Cajetan, as well as of Suarez, John of St. Thomas, the Salmanticenses, Toletus, Ripalda, Gregory of Valencia, and Sylvester. It is interesting to note that what they contributed to the clarification of this problem has not been cited in the recent discussions. Because, I think, they have something very positive to offer on this subject, they are worth considering. That, in my opinion, is sufficient reason for re-opening the discussion of Christian philosophy.

Fr. DuLac: You have just brought out the fact that whereas the problem recently has been considered by philosophers and historians, it was formerly treated by theologians. Did they consider it a theological problem, or did it just happen that theologians were also interested in Christian philosophy?

Fr. Dillon: They were not interested in an accidental way, but they considered it to be a problem belonging to theology. Their reasoning was this: the problem concerns the possibility of Christian faith's adding some new perfection or light to philosophy. Now, any consideration of the influence of revelation should be taken up in the science of revelation, i.e., in theology. Theology can treat of the matters of other sciences and examine them in its own superior light because it is wisdom. Since any argument about Christian philosophy must accept beforehand the fact that faith is a superior knowledge, the discussion about the problem will not be philosophical, but theological. In fact, those who would discuss the influence of divine faith on natural sciences cannot argue cogently or relevantly without themselves becoming theologians.

Fr. DuLac: If this problem is a theological one, in what part of theology is it found?

Fr. Dillon: It was discussed as an auxiliary question in the tract on faith, because the problem of Christian philosophy is related to the truths of revelation insofar as they are known by faith.

Fr. DuLac: Do you mean to say that these men—and I could not help noting considerable variety of opinion among the men you mentioned—were in complete agreement about Christian philosophy?

Fr. Dillon: With regard to the solution, no. All of them, however, were asking the same question. This fact, I think, gave them an advantage in the discussion. What is notable about the modern authors discussing Christian philosophy is not so much that they arrive at different answers (one expects as much in a debate), but that they begin with different "problems" of Christian philosophy.

Fr. DuLac: You apparently feel that the earlier theologians asked the right question. What is the problem of Christian philosophy?

Fr. Dillon: In a general way the problem concerns the relations between faith and philosophy. The seventeenth century theologians asked 1) is it

possible for the philosopher who is Christian to believe and to have scientific proof of the same truth? and 2) can the perfection and light of faith be in any way communicated to his philosophy so that his philosophical knowledge is perfected?

Fr. DuLac: Before inquiring into those problems, I should first like to ask if you think that the faith will have an influence on the whole of philosophy. How could the faith influence my acceptance of the rules for the opposition of propositions or, for that matter, anything else in logic? Or, to take another example, granted that the faith might have something to do with the doctrine of the immortality of the human soul, what would it teach about the vegetative soul?

Fr. Dillon: When I speak of Christian philosophy I do not mean all philosophical knowledge. Philosophy, first of all, is not one science, but several. If we speak of the influence of faith on philosophy, we do not mean on all the philosophical sciences, nor on all the truths of philosophy, nor even on all that is included under one philosophical science. We mean simply that if there are any philosophical truths influenced by faith—even if there were only one—then to that extent there would be Christian philosophy. I think this point is worth insisting on so that in trying to answer the problem we shall not be placed in the awkward and impossible position of attempting to show that philosophy, to be Christian, must be completely different. It is to be expected that there are certain disciplines that will not be influenced at all by revelation, such as mathematics, grammar, and logic. The reason is obvious. The purpose of revelation is not the manifestation of natural truths for the sake of knowing them, but only insofar as they are ordered in some way to divine truths and man's salvation. Hence, we should seek only for those truths which in some way are related to salvation as subject for Christian philosophy. The question of the influence of faith on philosophy might be expressed somewhat as follows: Can the Christian philosopher's faith influence at least some natural truths so that the Christian philosopher would be better as philosopher because of the influence of his faith?

Fr. DuLac: It seems to me it is time that we discussed in what the perfection of natural science consists, for only if we first see how it is more or less perfect, can we then see how it might be perfected by the influence of faith, if there is any such influence.

Aristotle in the *De Anima*[1] and St. Thomas after him[2] say that all science is good and honorable, but one science can excel another 1) by reason of its object, and in this way one science will be better than another if it is about better or more honorable things; 2) by reason of its quality or mode, and in this way one science will be better than another if it is more certain, e.g., as mathematics is more certain than ethics.

You would hardly say, would you, that faith perfects the philosophical sciences from the point of view of the object? Metaphysics, the science

[1] Bk. I, chap. 1, 402a1 f.

[2] *Comment. in De Anima*, Lib., I, lect. 1, nn. 3, 4; cf. *Summa Theologica*, Ia, q. 1, a. 5.

of immaterial being, is not more perfect in the Christian philosopher than in any one else, is it? I think that one of the points made by Msgr. Noel[3] and Dr. Harry McNeill[4] is precisely that faith cannot change the object of a philosophical science. If it did, the resulting science would be theology—not faith.

Fr. Dillon: I think you are quite right in what you have said about the influence of faith on the object of a natural science. The objects of the various philosophical sciences are something given; they are arrived at by a greater or lesser separation from matter. Any attempt to construct some kind of Christian philosophy by having faith influence the object of a science would simply destroy the order of specification of the sciences. And anyway, whatever be the specific objects of the various sciences they are all distinguished from faith in this: their objects are known by the sole light of natural reason; what is of faith is known by the light of revelation. To attempt to establish a Christian philosophy by unifying the objects of reason and faith is not to Christianize philosophy, but to destroy it.

Fr. DuLac: I think we can agree that faith cannot modify the specific objects of the sciences. However, I believe it is sometimes said that the influence of Christianity on the object of philosophy consisted in offering objects for consideration to the philosopher. It is certainly a matter of plain fact that philosophy developed in Christian times by reason of the fact that faith suggested certain truths for consideration. Among them one might mention the distinction between essence and existence, the distinction between person and nature, the notion of providence and many others. Even if these things are objects which could be known by reason alone, their development in philosophy arose out of the demands made by faith for the solution of problems about them.

Fr. Dillon: I shall not enter into a discussion of the particular truths you have mentioned, but I shall restrict my answer solely to the possibility of such influence. May I point out first that your former objection was based on the supposition that faith might influence the formal objects of the philosophical sciences. The present difficulty would place the influence of faith on the material objects of natural knowledge.

I do not think, however, that one can speak of a Christian philosophy in this way—at least not if Christian philosophy demands the intrinsic influence of faith. Suppose for the sake of argument that there was a truth revealed by faith which could have been known by natural reason but which *de facto* was not known or realized until the faith revealed it. Such a proposition could as well be the subject for speculation for the non-Christian philosopher as it can for the Christian philosopher. Simply because the philosopher is speculating about a truth offered by revelation, he is not for that reason Christian. What actually happened in the example proposed was that revelation was the occasion for the considera-

[3] "La Notion de la philosophie chrétienne," *Revue néo-scolastique de philosophie*, Tome 37, 2e série no. 44 (novembre 1934) pp. 337-344.

[4] *Proceedings of the Am. Cath. Phil. Asso.*, Vol. 12, 1936, pp. 37-45.

tion of a truth. To that extent revelation would not differ from other fields of knowledge which from time to time demand some philosophical explanation for things. This is not a reason for speaking of a new kind of philosophy. There is no intrinsic influence on the philosophical knowledge. Philosophy has simply advanced in a normal way by the cumulative efforts of many, each contributing a part to the advancement of truth. Whether the proposition is given by revelation or by any other discipline, the effect is the same: knowledge has advanced, but the object of the science has not been intrinsically affected.

If you would wish to call philosophy Christian because of such extrinsic reasons, there would, I suppose, be no objection to doing so. We commonly speak of Greek philosophy or German metaphysics, not to denote any intrinsic influences of these nationalities, but simply to set apart a certain period of philosophical thinking. But this, I think, is the disadvantage of the term. Usually, in speaking of *Christian* philosophy we intend more than a mere extrinsic influence. I think that the problem of Christian philosophy is meant to raise the possibility of some intrinsic influence on and perfecting of philosophical truth itself.

Fr. DuLac: You seem to be taking for granted that faith does perfect natural science. We have already agreed that it does not perfect the object of the natural science, but before we go on to Aristotle's second point—namely, perfection by reason of certitude—I should like to make clear a fundamental difference between the knowledge of faith and the knowledge of philosophy. Philosophy arrives at evident knowledge. To know for the philosopher means "to see" or to understand. If he has no evidence, he has no knowledge. Faith, on the other hand, is inevident knowledge. We accept, but we do not see the connection between the terms "God" and "triune." You would not say, then, that faith, which is inevident, could perfect the evidence of philosophy?

Fr. Dillon: No, obviously faith does not have any influence on philosophy in that way. To the extent that philosophical knowledge is evident and faith is not, philosophy is more perfect as knowledge than faith. Admittedly, faith has this note of imperfection about it: the mind in its assent is not at rest. The mind by nature seeks to see the truth, that is, have evidence. Even in faith, which is not evident, we are constantly seeking for evidence, not in the articles themselves, but in what precedes faith, the evidence of credibility, and also in what follows, insofar as we give reasons for our faith.

Fr. DuLac: We have established that faith cannot perfect the object of a philosophical science. To get on to the second point on the perfection of a science, would you say that this would be a fair statement of the problem: Can the faith of a philosopher increase the certitude of a particular demonstration he has in philosophy?

Fr. Dillon: I think that states it well. Incidentally, that was the problem as the seventeenth century theologians saw it and discussed it. They asked: Could a philosopher who is Christian add to the certitude of his philosophical demonstration the certitude which his faith gave him about

the same truth. If this is possible, then his knowledge is positively perfected, because certitude is intrinsic to the act of scientific demonstration, and the philosopher who had such knowledge could truly be called a Christian philosopher.

Fr. DuLac: One of the terms of the problem is certitude. Before we actually go into a discussion of the possibility of the influence of faith on certitude, perhaps we ought to make sure we are clear on the notion of certitude.

Fr. Dillon: The certitude we are speaking of, is of course, formal certitude, the firm adherence of the intellect to one part of a contradiction. Beyond the definition, what ought to be noted is that certitude is not just some characteristic of knowledge, but is the very perfection of knowledge. When the intellect knows reality in the judgment, it may affirm its conformity with varying degrees of strength. The intellect might give assent with some hesitation, as in the case of doubt; or with a certain reservation that the opposite of what it affirms might be true, and this is called opinion. Sometimes, however, the mind gives a total assent, that is, it is moved to its object in a firm and determinate manner without fear that the opposite of what it affirms might be true. This is called certitude. Certitude always denotes firmness, determined and unwavering assent to the knowable object. Hence, the definition: the determined firm adherence of the intellect to its knowable object.

Fr. DuLac: You said that the intellect was "moved to adhere to its object." This raises the question of the motives of certitude. Would you discuss this a little further; I think it will be necessary in order to distinguish between the certitude of faith and the certitude of natural knowledge.

Fr. Dillon: There are two possible causes, or motives, of certitude, which move the intellect to assent:

1) the proper object of the intellect which by evidence moves the intellect to assent. To the extent that the object is evident, that is, that a predicate manifestly belongs to some subject, the intellect can make its assent to such a proposition firmly.

2) the will, which, because it moves all the powers of the soul to their respective acts, moves the intellect to assent.

In scientific knowledge the truth scientifically known is a conclusion arrived at inferentially by way of the discourse. The formal *ratio* or scientific light by which the conclusion is manifestly proved is the premises or the middle term according to a certain formal abstraction from matter. This abstraction or immateriality is the root of the intelligibility in a science. When the intelligibility of the conclusion is manifest to the one knowing it, the conclusion is said to be evident. In scientific knowledge this evident intelligibility moves the intellect to assent firmly to what it sees, i.e., with certitude.

In faith, however, the light under which the truths are known is divine testimony, "*veritas prima in testificando.*" In the assent to a proposition of revelation the formal motive by which the mind is moved to assent (i.e., to believe) is the authority of divine testimony, not evidence. The

object in faith, lacking evidence, does not itself move the intellect sufficiently to produce the firm, necessary assent of science. St. Paul calls faith (Heb. 11:1) "the argument of things that appear not," and describes the act of faith in the words, (I Cor. 13:12) "we see now through a glass in a dark manner." The light of faith is not a purely intellectual light; rather, it illuminates the intellect *as moved* by the will. It is well to note that the role of the will is essential in the act of faith. In faith the will does not merely move the intellect to its act, but is involved in the very specification of the act of faith; the will supplies in faith what the object does completely in the act of scientific proof. Hence, the intellect in making an act of faith, assents to the truth not because the truth is evident, but because the object is presented as something congenial (*conveniens*) to the will. "*Credere non potest aliquis nisi volens*," observes St. Augustine. Because the truth of revelation is presented as a *bonum repromissum* and the will commands the assent of the intellect, faith is called a voluntary and not a necessary assent.

This essential role of the will is brought out in the definition of faith by St. Augustine (used also by St. Thomas): "*cogitare cum assensu.*" That is, in faith there is assent, a firm adherence to the truth proposed. At the same time, however, there remains the 'cogitation' of the intellect not quite at rest, not completely terminated in its act of knowledge because the truth is not evident and does not convince the intellect. The determined adherence and certitude that the intellect does have in faith is caused by the will moving the intellect to adhere firmly to the truth.

Fr. DuLac: From what you have said about the respective certitudes of faith and natural knowledge I am wondering if faith can be said to be more certain. This is important to establish, because, if faith is to perfect the Christian philosopher's knowledge, it should do so by way of giving a stronger certitude than he can find in his natural knowledge. It seems that the certitude of natural scientific knowledge is stronger. First, because certitude seems to imply both firmness of adherence and evidence of the truth to which the assent is given. From what you have said, natural scientific knowledge has both these characteristics, whereas faith has only the firmness of assent. I believe that St. Thomas in his treatment of certitude in the *De Veritate* observes that faith does produce a firmer adherence because of its stronger motive. But then he says that certitude also implies *evidence* of that to which the assent is given. To this extent faith does not have certitude, while scientific knowledge does. Therefore, it seems that we are forced to say that while faith may produce greater firmness of adherence than natural scientific knowledge, nevertheless, considering both the notes of certitude, namely adherence and evidence, it does not produce as great certitude as the natural demonstrative proof.

Fr. Dillon: That objection has a certain strength from the fact that ordinarily evidence does accompany certitude. However, faith compared to natural scientific knowledge is not only as certain, but actually far more certain. Let me put that in the form of an argument: Whatever moves the intellect to assent firmly and determinately to a proposition produces a greater certitude. This is simply the definition of certitude. Now, the

motive of faith, namely divine testimony, is the strongest motive there is. Therefore, it produces the greatest certitude.

What must be clearly understood about certitude is that it consists not in the amount of evidence, but in the firmness of assent. Certitude is not defined through evidence, but through firmness of adherence: *"certitudo est firmitas adhaesionis virtutis cognoscitivae ad suum cognoscibile,"* as St. Thomas defines it. In natural knowledge there must be evidence if there is to be certitude. This is simply to say that the intellect is not informed by an object whose intelligibility is not manifested to it. Unless the intellect *sees* that the two extremes go together, it cannot make a determinate assent.

In faith, however, the will, not the intellect moves the intellect to its assent. Faith is more certain simply because its formal motive, God Himself, is the strongest possible motive, and therefore produces the greatest certitude. Because in faith the formal motive moves so surely, faith is more certain than any scientific proof, more certain even than the principle of contradiction or sense knowledge. All of these, though certain, are based on some natural and fallible cause, whereas faith is based on the infallible authority of God Himself. To answer your objection directly, the degree of certitude is not determined by the number of notes, but by the strength of the motive moving the intellect to assent. That is why faith is more certain.

Fr. DuLac: I think you ought also to take into account an admitted imperfection in the act of faith—doubt. The very nature of certitude demands that it determine the mind to a proposition in a firm, unwavering manner to such an extent that all hesitation about it, all fear of error and doubt are excluded. Now this, it seems, is not true in faith. Experience shows that men sometimes doubt about the truths of faith, even withdraw assent, that is, lose their faith. While this does not detract from the truth of what has been revealed, at least it seems to show that *we* are not entirely certain about these truths.

Fr. Dillon: The objection you make would be valid if it could be shown that such doubts as there are in faith had their source in the motive of the certitude. But such is not the case in faith. In human faith there is a real lack of strict certitude because the intellect is not firmly determined. But in divine faith, where the motive is infallible (the authority of God), the doubts do not come from the cause but from ourselves who naturally seek evidence. As I have said before, faith has an imperfection as knowledge in so far as it does not terminate the cogitation of the intellect completely. And this imperfection will not be remedied on this earth. However, if a man doubts about the truths of faith to the extent that he loses his faith, this is not because of the insufficiency of the motive, but because he has withdrawn his motive for assent from the divine testimony given and preferred to rest in his own judgment.

Fr. DuLac: Now that we have seen the problem in terms of certitude, I think you ought to answer it. Let me state the problem as I think you must meet it. Merely to say that faith has a greater certitude than natural science does not solve the problem of Christian philosophy. There

seem to me many possibilities. One man might have the certitude of faith about something and another might have scientific proof about the same. Or, in the same man there might be faith and science but about different objects. Or again, the same man might have faith and science about the same object, but successively. In none of these cases are the two brought together. The problem, it seems to me, must be stated somewhat like this: Can a Christian who is a philosopher *at once* believe and know scientifically the same truth? Can he have at the same time, for example, faith in and evidence of the immortality of the human soul?

Only by bringing faith and philosophical knowledge together in this way can you prove that the philosopher's faith really could influence his science. Further, this it seems, is precisely the most difficult point to establish. An act of faith and an act of scientific knowledge bearing on the same truth seem to be incompatible because of the conditions and effects which they imply in the knower who has them.

Let me explain what I mean. When the philosopher knows by scientific proof, his knowledge is resolved into self-evident principles. Consequently, he assents because he *sees*, or has evidence, of what he knows. But the articles of faith to which he assents are not evident; faith of its very nature is an obscure knowledge. Were a philosopher who is Christian to have faith and science about the same truth, his mind would at once be in movement towards its terms of complete knowledge and have already arrived and rest in that term. In short, how can a man both see and not see at the same time? There is a similar case with the theological virtue of hope. Hope cannot exist in the blessed in heaven because it implies a *motion towards* a good, while being in heaven implies the *possession of* what was hoped for. In like manner, faith implies a certain motion towards a term, that is, the motion of the intellect towards evident knowledge. If that evident knowledge is present as it is in scientific knowledge, then faith cannot be present. But both cannot be present in the same man about the same truth.

Fr. Dillon: I think that this is the essential point of the whole problem. If the philosopher is to be called Christian in any intrinsic sense of that term, it will have to be in so far as his faith can influence his science in the way you have indicated. The objections you raise are very strong; and, to be frank, are not easily answered.

Let me say first of all by way of answer, that it is true that in the same intellect there cannot coexist an *act* of faith and an *act* of scientific and evident proof about the same object. As long as a philosopher who is Christian has a demonstrative proof about some object, e.g., the immortality of the soul, he does not—in fact, he cannot—make an act of faith about this. St. Thomas several times in the tract on faith in the *Summa* as well as in the *De Veritate* clearly and convincingly shows that it is impossible for a man to make an act of faith and an act of evident scientific knowledge about the same truth. His whole argument for the fact that Christ did not have faith is based on this reason.

This, however, does not treat completely the possible relations of faith and science in the philosopher. Another alternative would be this: a

philosopher might make an act of evident demonstrative proof about a particular truth while at the same time having the *habit* of faith. That he can do this is evident since he would all the while be believing other truths about which he had no demonstration. St. Thomas is interested in this point principally because of its relation to the merit of faith. He says, for example: "When a man has the will to believe the things that are of faith on divine authority alone, although he may have a demonstrative reason for some one of them, for example that God is, the merit of faith is not for this reason removed or diminished."[5] This passage is noteworthy because, although St. Thomas clearly denies the possibility of the same intellect having acts of faith and science about the same object, here he finds no incompatibility in the same intellect having a "demonstrative reason" while at the same time have "a will to believe." So, he concludes, as long as there is this ready obedience to assent, the merit of faith is not diminished.

The same can be said of the certitude of faith, because both merit and certitude spring from the same factor within the act of faith. We merit in faith not because of the number of things to which the mind adheres but because the will is prompt and ready to cling to God as the reason for believing. So, in certitude. The certitude does not come from the fact that the mind adheres to this or that truth; rather, it is caused because the will adheres firmly and unshakeably to God, its supreme good. The will in faith is the cause of the mind's adherence and the reason for its great certitude. Hence, while the Christian philosopher makes a specific act of natural science and has the certitude such an act engenders, he at the same time has his faith habitually and radically, extending to the same truth, though he does not make a specific act of faith about that truth.

Fr. DuLac: What do you mean by saying that the Christian philosopher still retains his faith "radically, extending to the same truth?"

Fr. Dillon: I mean that a habit (in this case, faith) is the root of the particular acts which proceed from it. A habit has a certain universality with regard to particular acts, actual or potential, which fall under that habit. A prudent driver will drive carefully in whatever situation may come up. The habit of faith in a man extends to all that has been revealed. If there should be some truth not known or assented to directly and actually, he nevertheless believes habitually and radically.

Fr. DuLac: Could you cite some examples where the act of faith is not made but where the merit and certitude of faith is present?

Fr. Dillon: Yes, several cases of this sort might be cited. The Blessed Virgin and the Apostles, for example, witnessed, and therefore had evidence, of many things about which we now make acts of faith. However, merely because our faith now has greater extension by reason of more specific acts, it does not follow that we have greater merit and greater certitude about these truths. Or again, the uninstructed Christian does not make as many explicit acts of faith as does the theologian. However, if there is that firm attachment of his will to the *bonum repromissum*, his merit is not diminished, nor is his certitude. He has the certitude of faith habitually and radically about whatever is revealed by faith. If the theologian

[5] *Summa Theologica*, IIa-IIae, q. 2, a. 10 ad 1.

would point out to him that a certain doctrine belonged to faith, then he would make an act about that truth and his certitude would be actual and directly concerned with that truth. In like manner, the Christian philosopher has faith habitually and radically, and therefore the merit and certitude of faith because of his *affectum credendi.* As long as he has a demonstration about a particular truth, he does not and cannot make an act of faith about this. But he does have the habit of faith which gives him a greater certitude *"in promptitudine animi"* because he is ready to believe the truth of which he has a demonstration. Furthermore, because of his demonstration he has a knowledge which simply speaking is more perfect because he has evidence. The greater perfection of the Christian philosopher consists in this: the demonstration of the Christian philosopher, by reason of the fact that his science is joined with his faith, has not only the certitude proper to the scientific act but also participates in the greater certitude communicated by faith.

Fr. DuLac: I can see from your examples *that* such an added certitude seems reasonable. I wonder, however, if you would explain exactly *how* the Christian philosopher participates in a certitude communicated by faith. I do not see, for example, how his faith can communicate certitude about a particular truth unless he elicits some act or assent. Certitude, as you yourself observed is the determination of the intellect to one part of a contradiction. This implies an act of the intellect. I do not see how there can be certitude without some assent of the intellect.

Fr. Dillon: Let it be repeated that faith does not communicate certitude through an act of belief about the particular truth known through demonstration. But it is possible, however, for the mind to make a judgment in which the certitude of faith will be contained and at the same time this perfection will be communicated to the natural demonstration. The Christian philosopher makes two judgments: 1) an absolute judgment. Here he judges that a certain truth, e.g., the soul is immortal, is contained in the deposit of faith. 2) The second is a comparative judgment in which he judges that he must not cling to sensible things and his natural reason to such an extent that because of these he would judge divine things to be false. This judgment is made in virtue of that effect of faith known as the purification of the heart. This judgment follows naturally upon that tending to things that are above, i.e., to God (faith is the beginning of that tending towards God) and an exclusion of any inordinate attachment to worldly things. Let me return to that first judgment where we can see how certitude is communicated to the natural demonstration. What does the Christian philosopher know about the immortality of the soul? By his natural demonstration he *sees,* i.e., he demonstrates that the soul is immortal. He does not see, i.e., he has no demonstration that the immortality of the soul is revealed by God. This he must believe. In believing he is not making an act of faith in the proposition: the soul is immortal; but he must always believe that God has revealed this truth. The certitude he has about this truth is a natural certitude, produced by the demonstration. But further, he participates in the certitude of faith, since he knows by firm faith that this truth has been revealed by God.

Let me approach this in another way. This truth, "God has revealed that the soul is immortal" is not contained as such in revelation. Nevertheless, it is an object of faith in so far as all truths contained in revelation are believed to be revealed by God. There is a difference in saying "I believe that the soul is immortal," and: "I believe that God has revealed that the soul is immortal." In the first instance the judgment bears on the *quod creditur,* a material object of faith. In this sense too we may say that we believe in God as one of the articles of faith. Now it is precisely about this proposition, namely the soul is immortal that the Christian philosopher does not make an act of faith since he has a demonstrative proof of it. In the second instance, the judgment bears on the *id quo aliquid creditur,* the formal motive of faith itself. In this sense we say, "I believe God." Let it be noted that the *prima veritas* (the formal object in faith) is not only that in the light of which all else is believed, but is also the first thing the mind clings to in faith. And precisely from this the certitude of faith springs. There is no further resolution in faith than to believe God, or to believe God revealing.

To return to the example. In the judgment "the soul is immortal" the intellect of the Christian philosopher is determined to assent to it by the object itself in so far as the evidence of his demonstration moves his intellect to assent. Accordingly, he has the natural certitude which accompanies his demonstration. Over and above this he has also a certitude springing from his faith. While he does not make an act of faith about this particular truth, he knows that God has revealed it and hence has a certitude about it superior to and added to the certitude of his natural demonstration.

Summary of the Discussion.

1. The problem of Christian philosophy is a theological problem. Because the problem is concerned with the influence of faith on natural knowledge, it is considered under the theological virtue of faith.

2. If philosophy is to be called Christian in any real sense of the term, revelation must have an intrinsic influence on philosophical demonstration.

3. Revelation might influence a philosophical demonstration in two possible ways: 1) the object; or, 2) the mode of the science.

4. Faith cannot influence the object of a demonstration intrinsically but only in an extrinsic way. An intrinsic influence on the formal object would change and hence destroy the science. Christian revelation has had an extrinsic influence on the material objects of the philosophical sciences. This may be spoken of as Christian philosophy in the same sense as we speak of Greek philosophy or Eighteenth Century philosophy.

5. It is possible for faith to influence the mode of the act, that is, the certitude of the demonstration. It is possible to speak of faith perfecting this, because faith has a greater certitude than any natural demonstration.

6. There can be no influence of faith on the natural demonstration if that involves an act of faith and an act of demonstration about the same truth. Two such acts by the same knower are impossible.

7. Faith can influence a natural demonstration in so far as the habit of faith extends to the same truth that is being demonstrated. The Christian who is also philosopher, knowing by faith that such a natural truth is also guaranteed by divine authority, has in addition to the certitude of his demonstration a certitude communicated by faith.

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RADIO ADDRESSES DURING THE ANNUAL MEETING

Panel Discussion: *Philosophy as a Way of Life*

Prof. Fitzgerald: The Department of Speech of the University of Notre Dame is happy to present the program which raises the significant issues of our day, Topics of Importance. Each week at this time on this station, members of the Notre Dame Debate Team and their guests discuss an issue which challenges all thinking Americans. Today a special panel is on hand. The American Catholic Philosophical Association has been meeting on the Notre Dame campus for the past three days and several members of the Association have taken time out from a busy schedule to appear on "Topics of Importance." To introduce them, here is Dr. Vincent Smith of the Notre Dame Philosophy Department, Editor of *The New Scholasticism* and author of the *Footnotes on the Atom*.

Dr. Smith: Here with me today are the Rev. Dr. Charles A. Hart, National Secretary of the American Catholic Philosophical Association, the Rev. Dr. David Dillon, of St. Paul Seminary, St. Paul, Minn., and the Rev. Dr. Henry DuLac of the College of St. Thomas, St. Paul, Minn. One of the topics at our meeting is the notion of Christian philosophy, and I am going to begin our panel discussion by asking for a definition, first of all, of philosophy itself. Dr. Hart, would you care to comment on that question? What is philosophy?

Dr. Hart: I think, Dr. Smith, that we could do no better than to go back to the original meaning of the term—philosophy. It comes from two Greek roots meaning "love of wisdom." To the Greeks, wisdom meant knowledge of ultimate causes, and the unified view of reality which would arise by that search for ultimate causes.

Dr. Smith: Does philosophy have anything to do with life or is it merely a kind of abstract, impractical discipline? You know philosophy has a bad reputation among many people. What does philosophy have to do with life?

Dr. Hart: It seems to me that in a practical way philosophy gives that larger view of things of which overcomes or counterbalances the narrowing effect of science. A scientist has to specialize; he must make his view of reality a very limited one. But much of the meaning of things, that broader meaning by which men live, is lost in this division of reality by scientists.

Dr. Smith: Doctor Dillon, I am going to ask you if you can supplement that question. Could you give us some examples of the kinds of problems that arise in philosophy? What questions would philosophy treat?

Dr. Dillon: Well, philosophy itself is not considered as one science or one discipline only but actually it embraces many. For example, logic or metaphysics and general psychology. Some of the problems that philosophy would discuss would be such things as the nature of the soul and the immortality of the soul in psychology; all the problems in logic and problems in natural philosophy; the problem of motion and of change.

Dr. Smith: Does philosophy have anything to say about God?

Dr. Dillon: Yes, it does. It says quite a bit about God. Ultimate philosophy, that is metaphysics, discusses the existence of God and His nature.

Dr. Smith: How would you say that this kind of knowledge, which you call philosophy, differs from the kind of knowledge we get through revelation, through something like the Bible?

Dr. Dillon: The knowledge we get through philosophy is discovered by man's reason alone. He must see the evidence of what he holds. The knowledge we get through revelation, for example the Bible, is brought to us by faith, that is, we take on God's word what we accept. These two branches of knowledge are radically separated because of the different ways we know them. In the one case we see, in the othr case we hear God.

Dr. Smith: We are going to have a discussion at our meeting tomorrow of the problem of Christian Philosophy. Now let's agree with Father Dillon that philosophy is not a matter of revelation. In what sense can we speak of a "Christian Philosophy" Dr. DuLac?

Dr. DuLac: We can talk about Christianity influencing philosophy, especially in those very truths where the revelation of God and what man can find by his unaided reason coincide, where those two ways of knowing touch. For instance, we might say that God has revealed something to us about the Trinity; that there are three persons in God. That we could only know because God tells us so. That wouldn't be any matter for strictly philosophical discussion. But there are some other things, such as the fact that the human soul is immortal and spiritual. That would be a matter that is touched on both by philosophy and by God's revelation.

Dr. Smith: In what way would Christian religion come in to aid philosophy? Would the revelation of God have any control over the philosopher's decisions or arguments in Christian philosophy?

Dr. DuLac: It might very well. Not in the sense that Christian revelation would influence all of philosophy, nor simply in the sense that faith

might offer some new matters to consider. That certainly can happen and has happened in the course of history. But it can possibly have an influence that would be more profound than that. I don't think we would say that faith would offer a new object for philosophical consideration in the sense that it would change any particular philosophy or any branch of it, but only in the sense that it can possibly help us know better the things that we know in philosophy.

Dr. Smith: That is a very interesting analysis, Doctor, and I am going to present another question which I think follows fairly logically from what we have been discussing. We have a Christian philosophy, why do we not have a Christian mathematics or a Christian logic or a Christian physics or a Christian chemistry? Dr. Hart, would you comment on that subject?

Dr. Hart: Well, I think that is rather easily answered in that where we have Christian philosophy it pertains to ultimate things, such as the ultimate nature of man, his ultimate goal, his relation to God. In other words it pertains to his very being. Now when we go into mathematics or similar fields, we are taking aspects of being. Consequently there is never any particular revelation on mathematics, generally speaking. But both revelation and unaided human reason have very definite information on the existence of God, the nature and destiny of man, and man's relation to God. If reason and revelation therefore overlap, it is possible that their views may influence one another and the result is a "Christian Philosophy." Where the two modes of knowledge do not come together, it is impossible to have such a philosophy.

Dr. Smith: I know you are very much interested in the subject of Christian literature, Dr. Hart, from your courses back at the Catholic University of America in Washington, D. C., from which you come. Would you say that we can properly speak of a Christian poem or a Catholic novel?

Dr. Hart: I think that is quite possible because here again we are dealing with matters of ultimate concern. The concern of the artist, for example the litterateur, is often with matters which are the concern of the revelation. So in those fields we can have a truly Christian literature, a truly Christian poem or novel.

Dr. Smith: But not a Christian mathematics or physics?

Dr. Hart: I think it would be impossible to have a Christian mathematics; we could have a mathematics of Christians but not a Christian mathematics.

Dr. Smith: Would you two other members agree with this analysis that there is a Christian philosophy, a Catholic novel in Christian literature, but there is no religious mathematics or Catholic physics or chemistry? Would that be acceptable?

Dr. Dillon: Yes, I think what Dr. Hart says is true. The reason for that is, as he brought out, that Christian revelation was not given to man simply as another form of knowledge but a knowledge as to enable him to go to heaven. So it is understandable that there will be many intellectual disciplines that will have no relation to man's ultimate end and for

that reason revelation won't tell us anything about them. But there are certain other disciplines which naturally treat of the same problems that man knows about from revelation as well as reason. And there I think you have two sources of information which may well influence one another.

Dr. Smith: Now let me ask this question. Is philosophy capable by itself of providing man with sufficient inspiration, sufficient illumination, to lead a good life and to reach his destiny? In a word, do we also need a religion, a Christianity, for example, in addition to philosophy? Doctor DuLac, would you care to comment on that?

Dr. DuLac: I think the experience of mankind brings out the necessity of something more than man's just using his own mind and relying on the resources of his own reasoning to find out the answers to these important questions. Certainly among the great thinkers of the world there are many solutions that have been true and valuable. But for people at large and for a solution to all these problems, I think we must turn to more than simply these things man can find out by his unaided reasoning. The question is rather does he find them out by himself alone? And I think that our experience shows that he very often does not.

Dr. Smith: Do you think these ultimate truths were discovered in any material way prior to Christian revelation?

Dr. DuLac: Certainly, a great many of them were. Such truths as the existence of God and the immortality of the soul, and even some things about God's nature were discovered by the Greeks, particularly, the greatest of the Greek philosophers, namely Aristotle.

Dr. Smith: Do you think that we might introduce at this time the problem of whether all men have some knowledge of God or whether most men have no knowledge whatsoever of the Supreme Being? Do the generality of men in the human race reach any kind of knowledge without any religion, without any formal theology at all? Dr. Hart, would you care to comment on this?

Dr. Hart: I think that would have to be answered in the negative. For instance, the notion of creation which seems so simple to us was a notion that was absolutely unattained by the highest achievements of the greatest Greek minds. Somehow or other, whatever the reason may be (Christians might say it was original sin), truths that men could have come to without the aid of revelation, they evidently did not achieve. And even those truths of which Father DuLac spoke seem to need a strengthening and reinforcement of revelation in order that they might be held by men at all. So it seems to me that this becomes a moral necessity if men are to gain a clear ultimate viewpoint by which they are going to live. This is the need of added revelation.

Dr. Smith: Well, that is a very fine and interesting answer, Doctor. I would like to bring up, however, the question I was leading to a moment ago, and that was whether or not men have a responsibility to seek out these ultimate answers? All men, not just Catholics, not just professional philosophers, not professional theologians, is there any responsibility for all men to ask these questions about the ultimate meaning of life?

Dr. Hart: I think that is a very definite responsibility; undoubtedly this is man's greatest responsibility: to know why he lives, to know what end he must achieve according to his nature. These seem to be absolutely important truths that are the only true source of happiness to man. As Christ, the Son of God, says: "Not by bread alone does man live but by everywhere that proceedeth from the mouth of truth." If men are unhappy today, it is because they do not know the manner of men they are and they do not know the goal towards which they move. Much of their unhappiness lies in their failure to exercise their God-given faculty of reason for the understanding of themselves and the purpose of their existence.

Dr. Smith: Now granted that men are unhappy because they are not seeking the meaning of the ultimates or are not living according to the knowledge they so obtained: Is there any assurance that they will be happy and that their problems will be resolved if they do seek and find answers to these ultimate questions. Dr. Dillon, could you comment on that question, please?

Dr. Dillon: Do you mean the answers that philosophy gives to such problems?

Dr. Smith: To a return to the question with which we began, namely, the practical value of philosophy. Is philosophy likely to make men happier, more contented, more adjusted? Is it likely to make their world a better world in which to live? For example, is it likely to contribute something to the solution of our present conflict between the East and the West, between capital and labor, between the various races of men? Can philosophy help men on the road to this happiness which they are not finding now mainly because they are not getting knowledge of the ultimate truth about life?

Dr. Dillon: I think we may say that while a great deal of philosophy is theoretical, it is also true that much of it is practical and somehow or other come to bear on very practical problems. The fact that today we think in a certain way or hold certain theories is ultimately due to philosophers who preceded us. For example, today we speak of the conflict between the East and the West. The reason for that is due to philosophers who lived hundreds of years ago. Though most men have never read their writings or even heard of them, nevertheless men today are speaking these older ideas as they have come down from generation to generation. Whether we like it or not, philosophy has had and does have powerful influence on the practical affairs of life which are necessarily based on the ultimate views men assume.

Dr. Smith: Father DuLac, I am going to come now to the problem that is of major concern to any discussion of the relations of philosophy to other forms of knowledge. What about the scientific character of philosophy? Does philosophy prove anything?

Dr. DuLac: Well, that is what the different divisions of philosophy attempt to do. The word science may possibly call for a little clarification. We're accustomed to using this word for experimental sciences—where a

man proposes a theory and then seeks to verify it or reject it by carrying on some kind of experimentation. Another meaning of the word, and one which is certainly legitimate, indicates a kind of knowledge that may be arrived at without any kind of experimentation, but, nevertheless, a knowledge where one can give a certain sure reason for the proposition that he holds. We've all studied some geometry. It would be an example of a science without experimentation but one which nevertheless arrives at very certain conclusions. Now that is the kind of non-experimental knowledge one is striving for in the various philosophical disciplines. Obviously we do not always obtain that kind of very certain knowledge about every proposition. Very often we have to be satisfied with the reasons which are less than the certain ones. But the science is a science by reason of having these sure reasons that we understand.

Dr. Smith: Well, let's try to get an example of what you are describing. I am going to ask you this question, Dr. Hart. Let's take the problem of the immortality of the soul. Do you think this is one of the questions that can be solved with certainty by philosophy and, if you do, what would be the reasons that you would give for the immortality of the human soul?

Dr. Hart: Of course, as we all know, the fact of the immortality is a revealed truth, but those who do not accept revelation, obviously would not be convinced by such revelation. Nevertheless, I think that in philosophy, as in the experimental sciences, we can judge the nature of a thing by the way it acts: As it acts, so it is. Now the philosopher feels that he can know at least something about the question of immortality by his own unaided reason. He says that there is no reason why the human soul should not continue to exist after separation from the body. He maintains this position because of the peculiar types of human activity properly characteristic only of man, namely man's thinking and willing. Let us take the example of man's getting an abstract idea of man. Take a definition of man as that of a rational animal. That definition is obtained by a process of abstraction in the human intellect. The mind sets aside all the particular aspects of man and seeks to gain that common aspect that transcends all time and place; it is thus a universal notion showing that there is no element of the material or the limited as co-cause of the notion. The soul alone is the principal cause of the getting of this idea. Now if the soul thus acts independently of the body, independently of sensation, as a co-cause at least, in the getting of such an idea, when it is in union with the body during this life why should it not continue to act independently of the body when the soul is separated from the body? Here the philosopher is proceeding in much the same manner as the scientist. He is trying to judge the nature of a thing by its peculiar activities. Here is man with his unique activity of rational thinking. He also has a free will which we don't find in the animal. Therefore, we must conclude that there is an immaterial type of principle for these immaterial activities in man, in a word what we call an immaterial soul. This independence of the soul when united with the body points in continued independent existence when separated from the body at death.

Dr. Smith: I see. So you are going from a kind of activity performed by man in thinking, and also in willing to the conclusion that the source of this activity must be something that is not material. Is that correct?

Dr. Hart: Yes, that is our denfiition of spiritual, namely, that which is in some intrinsic sense independent of the material. That is as far as we can go philosophically in our definition of a spiritual thing. Our one conclusive argument for immortality is the immaterial nature of man's soul. There is also the universal conviction of man in all times and places and condition of culture which confirms the argument from reason as correct. But common consent, of course, by itself, would not be absolutely conclusive.

Dr. Smith: I see, well, that is an example, at least, of the kind of proof that would be given in a philosophical debate. Now let's come back again to the problem of faith as distinguished from philosophical knowledge. Dr. Dillon, is knowledge by faith also certain? If it is, what reason can be given for its certainty?

Dr. Dillon: Well, I think we can best illustrate that by an example. When we speak of faith, we do not mean divine faith exclusively. We have faith also in our fellow men. We have faith in our newspapers and what we read generally, or what we hear over the radio. Before we believe something, we usually make some preliminary judgments. We ask whether the one who wants us to accept his word on faith really knows whereof he speaks, whether he has access to the facts of which he speaks or whether he also is speaking from hearsay. We might also ask the question, does this person wish to tell us of the truth of which he speaks? Does he have reason for deceiving us in some way. The difficulty with human faith is that we can never be absolutely certain because it is always possible for men either to be mistaken themselves or to wish to deceive us. I don't say that they always want to do that but at least it is possible. In the case of faith in God the question is different. We believe what God says knowing that God Himself can never be mistaken and knowing certainly that He would never wish to deceive us. Therefore, when we accept something from the authentic Gospels, we accept it on an authority that is completely infallible and expressed in such a way that men can never change it.

Dr. Smith: Now is that divine faith superior to knowledge obtained by philosophical proof?

Dr. Dillon: From the point of view of assurance and certainty, I think that is true. The example used as to the immortality of the soul is a good example. It is true that the philosopher can prove something about the immortality of the soul but when a man knows that hearing it from God, he is much more certain of it. He has a firmer hold on that truth.

Dr. Smith: Well, if that is the case, then, Dr. Dillon (I suppose I should ask this of Father DuLac in view of the previous contribution he made to our program), why should we not simply take things on the faith in God, and abandon the attempt to construct a philosophy? Why should we have a philosophy at all if the knowledge from divine faith is more certain than philosophy?

Dr. DuLac: Well, I think one reason is that the human mind tries to find out by its own effort as much as it can about the various propositions it knows or hears about. The mind is not content to accept all truths on the word of another. Not that truths known by faith are something inferior, but simply that the human mind does seek to find a reason where a reason can be found. That is the situation that we have in regard to some of these truths that we have already discussed. Man can know that his soul is immortal from the fact that God has revealed it. But he also seeks to ascertain that truth by his own reasoning as Father Hart has shown, and, being a reasoning animal, man seeks to bring the truths of faith into the realm of his own reasoning where that is possible.

Dr. Smith: I see, so that there is a meeting ground between the philosopher and the man of faith to the extent that the philosopher can analyze and know the same truths that the theologian may know by faith, but for different reasons and under different aspects. Now how is the Christian philosopher related to the man of faith?

Dr. Dillon: The faith that the Christian philosopher possesses can have an additional certitude to that of his own reasoning and that added certitude makes his knowledge something better than it would be if it were known merely by philosophy.

Dr. Smith: Well, let's get down to some concrete cases of Christian philosophers themselves. Dr. Hart, could you tell us some of the names of the great Christian philosophers of the past?

Dr. Hart: I suppose we should mention St. Justin, who was perhaps the first of these Christian philosophers. He was a Greek philosopher who came in contact with the Christians and realized the power to know which they had in their faith. Many early Christians were very simple men, slaves with little education, but by the gift of faith, they suddenly possessed a power and an answer to the problems that often great pagan philosophers were unable to give at all. Then, of course, we have St. Augustine who was really a great power in the formation of what we call a really truly Christian philosophy. In the middle ages we come to St. Anselm, St. Thomas, St. Bonaventure, Duns Scotus, and a score of others. The interesting thing about them was that all of them worked for a common cause. They made their contributions to a perennial philosophy. They did not particularly care to build up a whole system of their own but made contributions to a philosophical tradition in which their faith played an important part.

Dr. Smith: Could you tell us whether their thought has an applicability to our contemporary problems?

Dr. Hart: Yes, it is very apropos. For example, there the great present problem of whether God exists. That is what is dividing the world today between the East and West. That problem, of course, was settled by the Christian philosophers, both by revelation and by reason, together with all the consequences that follow from the fact that man is a creature of God. There is no more important truth in a man's mind than to know that he must conform to the will of God, and to God's law that is in his conscience. These are the questions that are disturbing the world very

much today, and, though they may seem theoretical in a way, nevertheless they have a great applicability in the issue before the world today between the East and West.

Dr. Smith: Do you agree with that, Dr. Dillon; that has some repercussions on the discussion we were having about the practicality of philosophy a few moments ago?

Dr. Dillon: Yes, I thought Dr. Hart brought that out very well. In any case we are going to have ideas and in any case ideas will influence action. It should be the work of the Christian philosopher to see that true and sound ideas do something towards influencing men's thinking in the right direction today and in the future generations.

Dr. Smith: What do you mean by ideas having influence? Could you give us some examples of that in the contemporary world? Could you take an example from the conflict between the East and West?

Dr. Dillon: Well, I think the most striking influence we have today is Marxism, which was a philosophy developed by Karl Marx, and before him, Hegel, the great German idealist. Those ideas are not only influencing men today but they are being studied regularly by active Communists everywhere.

Dr. Smith: You feel that the great need is to propagate some counter ideas to these false ideas, for example the positive Christian-cultural ideas of Western civilization?

Dr. Dillon: Yes, the Christian ideal has been the general ideal of Western civilization. It has lost hold somewhat in the last couple of centuries, but it can and should be restored.

Dr. Smith: Thank you, gentlemen, for a very enlightening half hour.

Radio Interview: *Philosophy and the Unity of Knowledge*

Prof. Fitzgerald: I should like to introduce to our radio audience Rev. Dr. Charles A. Hart, professor of philosophy at Catholic University of America in Washington, and National Secretary of the American Catholic Philosophical Association for nearly 25 years. The Association is meeting at the University of Notre Dame this week. Perhaps you could begin by telling us a little of the history of this organization, Dr. Hart.

Dr. Hart: The American Catholic Philosophical Association was founded in January, 1926 at Washington when a group of philosophers met at Catholic University of America for the purpose of encouraging study and research in the field of philosophy and allied subjects with particular interest in Scholastic philosophy.

Prof. Fitzgerald: That might be a good starting point. Just how would you distinguish philosophy from other fields of knowledge, say from the various sciences on the one hand and theology or religion on the other.

Dr. Hart: I think we could start with the original meaning of the terms designating the three fields you have mentioned. Literally—philosophy comes from two Greek words: philos and sophia. Philos means love and sophia means wisdom. A philosopher is therefore a lover of wisdom—not a wise man but a humble seeker of wisdom.

Prof. Fitzgerald: The word wisdom is a common enough term with sufficient vagueness to mean much or little.

Dr. Hart: For the Greeks who are said always to have a word for it—sophia or wisdom meant a knowledge of things in their most ultimate cause insofar as unaided reason could arrive at them—the cause of causes if you will—a getting back to ultimate answers and thus coming to fewer and fewer causes—perhaps to a single cause of all things.

Prof. Fitzgerald: You would mean by that single cause of all things what we might call God. Would philosophy then become theology which certainly generally considers God.

Dr. Hart: In a certain sense that is true. Aristotle, the greatest of the Greek philosophers of Ancient Greece, where philosophy had its origin, called his ultimate answer to things, not only his first philosophy, but also his theology. Today we distinguish between natural theology gained by unaided reason from a theology or knowledge of God's existence and His nature known by Divine Revelation, that is to say, what man knows of God and man's own relations with God by being told by God. As concerned with the most ultimate of all causes natural theology is thus the highest achievement of contemporary philosophy as it was for Aristotle and Plato as the greatest of the philosophers of antiquity. I think the most important thing to stress is that both philosophy and theology seek a total unified view of reality which a unified mind can thus better grasp.

Prof. Fitzgerald: Now to come back to our other field of science.

Dr. Hart: Well, in the Greek and Latin sense—science, from the Latin scire, sciens—to know—meant of course, causal knowledge, not merely a knowledge of facts, for example, such as history might provide, but the 'how' and 'why' of things. Science thus differs from philosophy and theology in that science seeks immediate causes of things whereas the other philosophy and theology seek ultimate causes. The sciences are each confined to a single section of reality viewed from a single viewpoint. For example, physiology considers living matter as in motion whereas anatomy considers the structure of living matter. Both are auxiliary to the general science of living matter which we designate as biology.

Prof. Fitzgerald: What do you consider as the particular advantage of philosophy in this scientific age?

Dr. Hart: That's a good question. Though the sciences certainly hold the center of the stage today, there never was a time which needed philosophy more than the present. The more the sciences divide up the field of reality as a whole—the one price which sciences must pay for greater understanding of a relatively narrow field—the more the modern mind needs to bring the many parts together for a total view of the whole of reality. Much of the meaning of individual parts can be gotten only by bringing them all in relation to the whole;—a synthesis, a unification, counteracting the analysis and fragmentation of reality which must necessarily go along with scientific advancement.

Prof. Fitzgerald: You might suggest, Dr. Hart, how you would go about getting this total view of reality.

Dr. Hart: Well, in the tradition of the perennial philosophy which has been continuous from the time of Aristotle and Plato, the great luminaries from the centuries before the Christian era, the most important aspect of things is their very being simply as existing things. It is this which is the proper object of the intellect just as we should say that the colored surface is the object of the sense of vision. A thing must simply be, that is, exist, before it can naturally exist in a certain way or in a certain manner. We generally assume this existence of things in the various sciences and then proceed to study their manner of being in some section of reality. But it can be seen that everything of every class or species of things has this in common, that it is, or exists. If we follow the guidance of our intellect working on its own proper and exclusive object, beings simply as existing, we can, as it were, gather all the multitude of existing things together on this common basis and seeing them thus, we can approach that total view of things that our unitary minds so much demand. You see we are all born natural philosophers, all more or less of a speculative turn. Out of our wonder both philosophy and science are born.

Prof. Fitzgerald: And what do you think is the most important vision we get by this being simply as existing approach to reality?

Dr. Hart: To me it is the fact that none of these multitude of things possess all the perfections of existence and therefore, in addition to their own exclusive principles of existence each possesses an additional principle of limitation, of exclusion, a definite possibility of existence within which each receives his actual existence. This potentiality for existence has been given the name of essence by the great metaphysician of the Middle Ages, the Dominican, St. Thomas Aquinas. This principle of limitation or essence is what makes it possible to have the limited, and therefore the many, existing beings of our experience. Existence is received into each of these limiting essences to the extent that existence can thus be received. We say they 'participate' existence.

Prof. Fitzgerald: Then, we should have to declare the many beings of our direct experience as composite beings that is composed of an intrinsic limiting principle of essence and a perfecting principle of existence—thus accounting for their multiplication.

Dr. Hart: Yes, and what is most important, we must say that existence is not proper or intrinsic to their essences. That means that ultimately we must grant a Being in whom existence is proper to, or identical with, His essence, and who therefore does not have to receive existence as do all the beings of our direct experience; One who can therefore give existence to all other beings, who being limited and so without existence of their natures or essences must receive it. That is to say, the latter must be created by the self-Existing Being whom we call God. That is the great importance of the being or existential approach, the approach to beings simply as being or existing; what we call the metaphysical approach because it is beyond the changing or physical approach, beyond the quantitative mathematical approach, the only approach by which unaided reason may come

to God. What has always filled me with wonder is the ease with which reality around us and grasped by us directly proclaims to us the existence of God, the Creator of the universe, provided of course we are willing to follow the clear simple directions of the proper object of our intellects, namely the existence of beings. If however we deliberately confine our intellects simply to the consideration of the data of our senses, as do the various sciences, then it is impossible to come to God by reason alone. That should not be surprising when we realize that the sciences all assume the existence of their data and then go on to investigate some mode of existence. This is a perfectly legitimate procedure. The sciences have a perfect right deliberately to limit their approach, to assume at the outset the existence of things. Then they can tell us much of speculative and pracical value about the manner of existing things in any selected division of reality. But sooner or later the mind must consider this mysterious fact of existence itself. Why should things exist at all rather than not exist? May we also point out the possible, but not necessary danger, of the scientist's constant assumption of the existence of the data of his direct experience, namely that from this scientific habit of assuming the existence of the investigated world around him he may unconsciously declare that world as having existence in itself—namely make a self-Existing Being or God out of the universe. The one thing that will keep him from making such an error is the influence of the philosopher, that is the metaphysician, who concentrating on this simple fact of existence itself of things can readily demonstrate the impossibility of the changing universe ever being self existing.

Prof. Fitzgerald: Well, Dr. Hart, in a very few minutes you have put us into a philosophical frame of mind, the spirit of the men and women who are meeting this week at the University of Notre Dame as members of the American Catholic Philosophical Association.

Dr. Hart: Yes, Prof. Fitzgerald, we our deliberations are ultimately as important as any that can engage men's minds in an age when so much erroneous philosophy is rampant, when, for example, God's existence is denied as the basis of the political philosophy of Communism with all the evils attendant upon such a view of reality. Today the whole world is divided into two hostile camps, the one dominated by those who believe in God's existence and the natural law He gives in the conscience of man whereby man may be directed to his ultimate end and happiness, the world of Western democracies and on the other the atheists who deny God's existence and His law and therefore deny the worth and dignity of man as God's highest reflection within the visible universe, the world of Eastern totalitarian tyranny. It is most important for us in America clearly to realize how completely our democratic way of political life is tied up with the traditional view of God's existence and man's spiritual and personal nature. Indeed we can say democracy is a consequence, by-product of such a view of life. Indeed the greatest danger to Western democratic way of life is the present day widespread prevalence of so-called contemporary secularism which differs from atheism only in this that

secularism often does not bother formally to deny God's existence but insists that man in every sphere of life, in education, in economic, political and social affairs shall proceed as though God and His law do not exist, in a word adopts without reason a truly practical atheism.

Prof. Fitzgerald: Thus you seem to be making the great issue of our day a religious one, namely the question of God's existence rather than a political issue, such as problem of political Communism or totalitarianism.

Dr. Hart: Most emphatically I do. For example whether man has such a thing as a natural right to private property depends upon whether man has a spiritual principle which distinguish him from the animal. If he does not have such a principle as Communists insist then he has no such peculiarly human right as that of private property.

Prof. Fitzgerald: Well our time is up. Thank you Dr. Hart for your enlightening comments.

PROCEEDINGS OF THE AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION

Minutes of the Meeting, April 7-8, 1953

morning session, april 7, 1953

The American Catholic Philosophical Association met at the University of Notre Dame, under the patronage of His Excellency, Most Rev. John F. Noll, Bishop of Fort Wayne, and the Catholic universities, senior colleges and seminaries of the Notre Dame area, on Tuesday, April 7, 1953, at 9:30 a.m. The general subject of the meeting was "Philosophy and Unity." Rev. Edward Q. Franz, Gannon College, Erie, Pa. opened the discussion with a paper on "Philosophy and Unity of Knowledge." Dr. Jacques Maritain, Princeton University, concluded the morning session with a paper on "Philosophy and Unity of the Sciences." Comments on the papers were led by Fathers Leo Schumacher and Joseph Clark respectively.

The following committees were appointed by the chair at this morning session: Nominating Committee: Mary L. Brady, James Anderson, Vincent Kelly; Auditing Committee: Raymond McCall, Sister M. Annice, Ernest Kilzer; Resolutions Committee: George P. Klubertanz, Lottie Kendzierski, Francis M. Tyrrell.

afternoon session, april 7, 1953

The first afternoon session met in three sections, each section being called at 2:30 p.m. The "Logic and Method" division was under the chairmanship of Rev. James Linehan, St. Mary's Seminary, Baltimore, Maryland. Sister M. Annice Donovan spoke on "The Place of Generic Concepts in Learning;" comment was led by Rev. Joseph Colleran. The "Philosophy of Nature" division, under the chairmanship of Rev. Edward A. Maziarz, St. Joseph College, Collegeville, Indiana, heard a discussion on "Nature:

Deterministic or Indeterministic?" led by Rev. Raymond J. Nogar, Albertus Magnus Institute; comment led by Rev. William Kane. The "Metaphysics" division heard a paper on "The Unity of Matter" by Rev. Timothy J. O'Mahony, Holy Cross College; comment led by Doctor Kato Kiszely-Payzs, Detroit University. This discussion was conducted under the chairmanship of Rev. W. Norris Clarke, Bellarmine College, Plattsburg, N. Y.

DINNER SESSION

The Annual Dinner was held at 7:00 p.m. in the Morris Inn Banquet Room, Dr. James Collins, Vice-President, presiding Very Rev. Theodore Hesburgh, President University of Notre Dame, extended University greetings. Dr. Elizabeth G. Salmon had for her Presidential Address the subject "Philosophy and the Unity of Wisdom."

MORNING SESSION, APRIL 8, 1953

The Morning Session, April 8, convened at 9:30 a.m. This session heard papers by Rev. L. M. Regis, O.P., Montreal, Canada, on "Philosophy and Unity of Philosophy of Nature," and of Rev. Gerard Smith, Marquette University, Milwaukee, Wisconsin, on "Philosophy and the Unity of Man's Ultimate End." Comment on the first named paper was led by Dr. James McWilliams and on the latter by Dr. Vincent E. Smith.

GENERAL BUSINESS SESSION, 1:30 P.M., APRIL 8

The general business session was held in the Engineering Building Auditorium of University of Notre Dame. The Chairman of the Committee on Auditing, Dr. Raymond McCall, reported favorably on the Treasurer's Report. The Report of the Treasurer, Rev. J. B. McAllister, was then read by Rev. Charles A. Hart in the absence of Dr. McAllister. (This report is published in these *Proceedings* under the heading "Report of the Treasurer.")

The Chair announced the following committees to have charge of the Round Table discussions in the various divisions of philosophy at the next meeting of the Association at Milwaukee, Wisconsin, April 20 and 21, 1954:

Charles A. Hart, General Chairman
Logic and Method, John J. Doyle, Chairman
Metaphysics, Herman Reith, C.S.C., Chairman
Ethics and Moral Philosophy, Francis X. Meehan, Chairman
Philosophy of Nature, Lucien Dufault, O.M.I., Chairman
History of Philosophy, James Conway, S.J., Chairman
Philosophical Problems, Thomas E. Devitts, S.J., Chairman

The Committee on Resolutions, through its chairman, Father Klubertanz, made its report which was approved. (This report is published in the *Proceedings* under the heading "Report of the Committee on Resolutions.") Dr. James Collins, chairman of the Committee on Research Publications, did not have any report to make at the time of the meeting. In addition to Dr. James Collins, the Chair appointed Dr. William Walton and Rev. Leo R. Ward C.S.C. to the Committee on Research Publications.

The secretary's report for the year was read by Secretary Hart and accepted as approved by the membership. (The report of the Secretary is published in these *Proceedings* under the heading "Report of the Secretary.") The Secretary also read the report of the Meeting of the Executive Council. (This report is published in these *Proceedings* under the heading "Minutes of the Executive Council Meeting.")

Chairman Brady of the Nominating Committee reported the following nominations for officers for the coming year:

For President—Dr. James Collins
For Vice-President—Dr. Charles O'Neil
For Secretary—Rev. Charles A. Hart
For Treasurer—Rev. Joseph B. McAllister

For Executive Council (3 years)—{ Sister Mary Ann Ida, B.V.M.
Dr. Lawrence Lynch

Upon vote of the membership, the Secretary was instructed to cast an unanimous ballot for the nominees as offered by the Committee, the nominees thereupon to be considered duly elected. The Chair named a Committee of Rev. Francis Wade and Rev. Francis X. Meehan to escort the new president to the chair. Dr. Collins emphasized the great opportunities of our Association to contribute to the soundness of thinking in the contemporary, political and social field. He pledged his full support in the furthering of the objectives of the Association.

AFTERNOON SESSION, APRIL 8, 1953

The second afternoon session met in three sections, each beginning at 2:30 p.m. The "Moral and Political Philosophy" division, under the chairmanship of Rev. Robert E. McCall, S.S.J., Epiphany College, Newburgh, N.Y., heard a discussion on a paper entitled "Individual Rights as a Limitation of the Common Good" by Francis C. Lehner; comment led by Rev. Carl W. Grindel C.M. Under the "History of Philosophy" division, chairmaned by Rev. Bernard Mullahy C.S.C. of University of Notre Dame, a paper was heard on "Grosseteste's Contribution to the History of Philosophy" by Dom Henri Pouillon; comment led by Dr. Beatrice H. Zedler, Marquette University. The "Philosophical Problems" division was a panel discussion on "The Nature of Christian Philosophy," leaders: Rev. David Dillon, St. Paul Seminary, and Rev. Henri DuLac, St. Thomas College, St. Paul, Minn., under the chairmanship of Dr. Roman Kocourek, also of St. Thomas College. All divisions adjourned at 5:00 p.m.

CHARLES A. HART,
Secretary

REPORT OF THE SECRETARY OF THE ASSOCIATION

The Secretary has been making quarterly reports of the activities of the Association through his column "From the Secretary's Desk" in each issue of *New Scholasticism*. Newsworthy items from the members of the Association are solicited. Almost any type of news in the field of philosophy can properly be included.

The twenty-sixth annual meeting of the American Catholic Philosophical Association was held at the Statler Hotel, Cleveland, Ohio, April 15 and 16, 1952 under the patronage of His Excellency Archbishop Hoban and the Catholic colleges and seminaries of the Cleveland area. The papers of this meeing were published as Volume XXVI entitled *Proceedings of the American Catholic Philosophical Association* and were distributed to all members in July of 1952. Also distributed to all members were copies of Rev. Dr. Joseph Clark's monograph *Conventional Logic and Modern Logic* which the Association had published under subsidy as Volume III of Studies of the American Catholic Philosophical Association. Additional copies are available at the office of the Secretary.

The membership of the Association as of April 1, 1953, was as follows:

Life	21
Constituent and Associate	551
Student	40
Institutional	129
Total	747

The *New Scholasticism* was published in quarterly issues during the past year as Volume XXVI. Distribution was as follows:

Members of the Association	747
Subscribers to *New Scholasticism*	322
Exchanges	75
Complimentary	15
Total	1,159

The Association acknowledges free use of office spaces and free facilities for files from the Catholic University of America for the Secretary and Treasurer of the Association. Similar free office space was accorded to the Editor of *New Scholasticism* by the University of Notre Dame.

The Secretary calls to the attention of the members the deficit of $161.00 during the past fiscal year ending December 1, 1952, necessitating a withdrawal in that amount from the Association's invested funds for publication of acceptable monographs in philosophy. This of course would not be desirable as a regular procedure. With the very great increase of cost of printing over the past decade it is very unlikely that the Association will be able in the future to increase its invested funds for prospective studies in the forseeable future despite the fact that at no time has the Association had to undertake any salary list for officers or payment for

any articles in its quarterly journal. It is because of this free service that the Studies publication fund in the sum of $12,900 is now at hand. It is to be hoped this fund will not be dissipated in ordinary current expenditures. Each year's expenditures should be met by the current receipts of that year. One way to double our revenue from our invested funds would be to invest such funds in common stock of conservative companies which have a record of many years for regular payment of dividends averaging around 6%. When the Secretary was also Treasurer of the Association during the period in which most of this fund accumulated there was no fixed policy as to the type of investment for these accumulated assets. Hence the Secretary invested the fund in building and loan associations in the District of Columbia. Since that time the interest on this type of investment has decreased to about 3% on the average. The Secretary asked and received the approval of the Executive Council for such reinvestment in conservative common stock, such as for instance. the American Telephone and Telegraph Company with the view to such increase in revenue. This is in line with the policy of many institutions during the past five years. If this additional revenue had been available during the past year, we would not only have had no deficit but we could more than have met the payment of last year on the Clark monograph. We also urge the support of the members in the way of influencing Catholic colleges and seminaries with which they may have relations to take out institutional memberships where such are not now possessed and to urge continuance in such memberships if they are already in existence. Without a considerable support from our 400 colleges and seminaries we could never have continued to function. At present only about one-third such institutions give us this most valued and relatively more stable support. Our difficulty is that despite constant effort in the securing of a considerable number of new members each year we are constantly losing approximately the same number during the year.

During the year a new Southern California Regional Conference was established under the leadership of Rev. Father G. V. Kennard, S.J. of Loyola University of Los Angeles and a committee of priests and laymen from that city. We urge various individual members to consider themselves as committees of one for the setting up of such local conferences in regions where they do not now exist. The Secretary has been empowered to appoint temporary chairmen for such proposed new conferences. This office will also be glad to learn of activities of the various conferences now functioning in the present ten regions for publication in the Association's journal.

The Secretary received one manuscript from the Executor of the will of the late Professor Borchardt. He forwarded this to the members of the Committee on Research Publications. Report will be made on the same by the Chairman of the Committee. It is hoped that there may be a considerable increase in such application. We had thought that our difficulty would be many suitable manuscripts without funds for publication, whereas the actual situation is funds without suitable manuscripts.

During the year the Association lost by death two of its most active

members, both of whom had acted in the editorial board of *New Scholasticism* at different times, namely, Brother Benignus Garrity, F.S.C., of Manhattan College, New York, New York, and Dr. Louis J. A. Mercier of Georgetown University. The Secretary offered Masses of Requiem for the deceased on behalf of the Association at the National Shrine of the Immaculate Conception in Washington, D.C., and expressed the Association's condolence to their respective families and institutions.

CHARLES A. HART,
Association Secretary

MINUTES OF THE EXECUTIVE COUNCIL MEETING

The Executive Council of the American Catholic Philosophical Association held one meeting during the past year, at Morris Inn, University of Notre Dame 8 p.m. on April 6, 1953, Dr. Salmon presiding. All members, except Dr. Joseph McAllister, were present. The Council accepted 29 applications for individual membership, one for institutional, one for life membership, and sixteen for student membership. In expectation of a possible joint session for one afternoon with the National Catholic Education Association on the subject of philosophy of education, the Council voted to accept the invitation of the President of Marquette University to meet at Milwaukee on Easter Tuesday and Wednesday April 20 and 21 1954. The National Catholic Education Association had already announced Chicago as the place of its 1954 meeting. The Council voted to make the subject: *The Existence and Nature of God,* as the general theme of the meeting. Dr. John Oesterle was appointed to arrange for the joint session with the National Catholic Education Association if possible.

In his report to the Council on the Association's quarterly journal New Scholasticism Dr. Vincent E. Smith, Editor, asked consideration of the restoration of the section on Review of Periodical Literature as a regular feature of the journal. He stated that he was quite sure of the support of the students and faculty of the graduate division of the Department of Philosophy at University of Notre Dame in this matter. The Council requested the restoration of such a section, as of considerable value to the membership. With a view to increasing general revenue the Council voted also to request the Business Manager of *New Scholasticism*, Dr. Joseph McAllister, to make every effort to secure advertisement for *New Scholasticism* in keeping with the character of the journal. The Council named Dr. Henri DuLac of the College of St. Thomas, St. Paul, Minn., and Dr. James Haggerty of St. Mary's College, Moraga, Calif., as Associate Editors for a period of three years.

With a view to increasing the dividends from the Association's investments the Council voted to reinvest such funds and directed the Secretary to arrange for such reinvestment according to his best judgment from the

present type of building and loan associations investment to a more profitable common stock type in companies having long continuous record of payment of dividends.

The Council named Dr. Vernon Bourke, Past President of the Association, of St. Louis University, Dr. Donald Gallagher of Marquette University, and Rev. Dr. Leo Schumacher of St. Mary Seminary, Cleveland, as delegates to the International Congress of Philosophy in Holland in August 1953. The Council expressed interest in a large representation from our Association.

The Council considered the question of the next award of the Cardinal Spellman-Aquinas Medal for excellence in philosophy. After lengthy discussion the Council decided to set up certain standards for future awards as follows: Outstanding teaching; personal publications of permanent and scholarly value; influence upon American philosophical thought without reference to membership in the American Catholic Philosophical Association. Upon this basis each Council member was asked to nominate three candidates for the Award, with record of each candidate, filing such nominations and records with the Secretary before the end of December. Copies of the nominations are to be provided each member of the Executive Council for action at the next Council meeting at the time of the next annual meeting in Milwaukee. The Council will then make the next Award.

For the information of the Executive Council and members of the Association the Secretary reported that a Council of National Catholic Societies was formed under the temporary chairmanship of the Secretary at a Morris Inn meeting at University of Notre Dame on April 7, 1953. The representatives from eight national Catholic societies were present and expressed the approval of their respective associations for the formation of such a Council. The associations represented were the American Catholic Philosophical Association, the American Catholic Historical Association, the Catholic Economic Association, the Caholic Sociological Association, Canon Law Society of America, Catholic Theological Society, the Catholic Biblical Association, and the Catholic Psychological Association. The first meeting of the Council will take place at Cleveland, Ohio, on October 10, 1953, when the secretaries of the various associations will meet for a formal organization and conduct of the business of the new Council.

The Council adjourned at 10 p.m.

CHARLES A. HART,
Secretary of the Council

REPORT OF THE COMMITTEE ON RESOLUTIONS

Whereas there is a widespread discussion of, and controversy about, academic freedom, and whereas Columbia University has proposed, for discussion by University groups during their bicentennial celebration, 1953-1954, the topic, "Man's Right to Knowledge and the Free Use Thereof," therefore

Be it resolved: That the American Catholic Philosophical Association go on record as recommending that Departments of Philosophy of Catholic schools make a thorough study of academic freedom in relation to the subject proposed by Columbia University, and that the Secretary be instructed to inform the President of Columbia University of this resolution.

Whereas the Association and the cause of philosophy itself has suffered a great loss in the deaths of Brother Benignus Gerrity, F.S.C., and Doctor Louis J. A. Mercier, therefore

Be it resolved: That the Association offer its condolences to their families and the institutions with which they were connected.

Whereas the outstanding success of this twenty-seventh Annual Conference at Notre Dame has been largely due to the encouragement of His Excellency, Most Rev. John F. Noll, Bishop of Fort Wayne, the local clergy, the faculties of the colleges and seminaries of the area; to the untiring labors of the Officers, in particular the Executive Secretary; to the efficient efforts of the Local Committee on Attendance; to the co-operation of the Morris Inn, and above all, to the whole-hearted generosity of the University of Notre Dame; therefore

Be it resolved: That a special vote of appreciation be extended on behalf of the American Catholic Philosophical Association to the generous patron of the Conference, Bishop Noll, to the President of the University of Notre Dame, the Very Reverend Theodore Hesburgh, C.S.C., to the local clergy, the faculties of the colleges and seminaries of the area, and the Committee under the Chairmanship of the Reverend Herman Reith, C.S.C., to the retiring officers, and to the Executive Secretary, the Reverend Charles A. Hart.

Lottie H. Kendzierski
George P. Klubertanz, S.J.
Francis M. Tyrrell

REPORT OF THE TREASURER

Financial Report of Period December 1, 1951 to November 30, 1952

Receipts

Balance, 2nd National Bank of Washington, November 30, 1951	$ 503.02	
Membership dues	5,391.50	
Subscriptions to *The New Scholasticism*	1,242.40	
Sales of *The New Scholasticism*	211.66	
Sales of *Studies*	50.25	
Sales of *Proceedings*	525.77	
Interest from Investments	37.50	
First Federal Savings (withdrawn from account)	500.00	
His Eminance Francis Cardinal Spellman	100.00	
Annual Meeting	270.72	
Miscellaneous	2.20	
Total Receipts		$8,835.02

Expenditures

Publishing *The New Scholasticism* (4 issues)			
Composition	$1,462.09		
Paper, presswork, binding	1,700.22		
Cover	153.75		
Corrections	167.16		
Mailing costs (paper and printing of wrappers, inserting and assorting, postage, and expressage of excess copies to Washington)	130.42		
Free Reprints	100.12		
Correction and duplication of mailing list	115.81		
		3,829.57	
Publishing *Proceedings*		1,545.19	
Printing			
Stationery	176.95		
Programs and tickets	145.10		
Miscellaneous	147.24		
		469.29	
Secretarial services			
For Secretary's Office	386.13		
For Treasurer and Business Manager's Office	560.76		
Editor *The New Scholasticism*	500.00		
		1,446.89	
Postage		337.35	
Supplies and equipment			
Editor *The New Scholasticism*	133.05		
Secretary and Treasurer	98.79		
		231.84	
Refunds on subscriptions and memberships		26.76	
Secretary expenses at Cleveland meeting		49.54	
Philosophical Studies III, First payment to Fr. Clark, S.J.		400.00	
Badge bars for Cleveland meeting		23.30	
Scroll work for Cardinal Spellman presentation		15.00	
Miscellaneous		121.53	
Total Expenditures			$8,496.26
Balance on hand, 2nd National Bank of Washington, November 30, 1952			338.76
			$8,835.02

Total Assets of the Association

First Federal Savings and Loan Association, D. C.	$ 5,845.00
District Building and Loan Association, D. C.	5,306.80
U. S. Government Bonds, Series G	1,500.00
Balance on hand November 30, 1952	338.76
	$12,900.56

The Catholic University of America
Washington 17, D. C.

JOSEPH B. MCALLISTER
Treasurer

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